Chapter 5

INTERWAR AND GLOBAL WAR: DEATH OF THE BRIGADE

The Interwar Years: Square and Mechanized Brigades

The square brigade organization survived the demobilization of the Army after World War I. For the first time ever, the Army retained units larger than the regiment after demobilizing from a war. Despite several studies urging a smaller, triangular division based on three regiments, the four-regiment-, two-brigade division structure was retained throughout the interwar period. The Regular Army, though reduced in size, kept the brigade and divisional structure used in the war. The tidy numerical structure instituted in the war was soon disrupted by the shuffling of the brigades three times, twice in the 1920s, and later in 1933. Additionally, brigades that had formerly belonged to the 10th, 11th, and 12th Divisions were reassigned to the Panama Canal, Hawaiian, and Philippine divisions. In the force structure, seven brigades remained in an active status, while the other divisional brigade was retained in an inactive status. The National Guard was demobilized back under state control, and after a brief period of organizational turmoil, also retained the brigade and divisional designations and structure used in the war, though some designations were shuffled around and eight new brigades were created. The National Army was demobilized unit by unit, but its unit designations were used to form a new Federal Reserve component, the Organized Reserve Corps (ORC). Twenty new infantry brigades were formed in the ORC, as the ORC created 10 new divisions in the interwar period.

During the war, the Army had briefly organized the 15th Cavalry Division, consisting of the 1st, 2d, and 3d Cavalry Brigades. The brigades continued separately after the division's inactivation until 1919. In 1921, a new 1st Cavalry Division was created, using a variation of the two-brigade square division format, with the 1st and 2d Cavalry Brigades replacing the infantry brigades.[1]

European experimentation made Army leaders relook at the mechanization of cavalry and the employment of tanks as an item of interest in the late 1920s. In 1928, the Army assembled a group of units, the Experimental Force, at Fort Meade, Maryland. The force, a combination of an infantry battalion, two tank battalions, and a field artillery battalion, under the command of a colonel, would be the first combined arms maneuver brigade in the modern era. A board replaced the Experimental Force in 1928. The Mechanized Force Board report recommended the organization of a combined arms mechanized brigade in 1930. However, the organization barely got off the ground when fiscal restraints caused by the Great Depression reduced it to battalion strength. Under the new Chief of Staff, General Douglas MacArthur, the project was cancelled all together in 1931. MacArthur preferred a branch-specific approach to mechanization and both the cavalry and infantry branches therefore developed mechanized units separate from each other.[2]

Accordingly, cavalry branch organized the 7th Cavalry Brigade (Mechanized) in 1932 to be its experimental mechanized force. The brigade became the first combined arms maneuver brigade organized in the US Army since Washington had attached artillery directly to his brigades in 1777. The brigade's organization grew over time from the arrival of the 1st Cavalry Regiment at Fort Knox, Kentucky, in 1933, to the assignment of the 13th Cavalry Regiment

and a battalion of the 68th Field Artillery in 1938. The cavalry regiments became mechanized by using "combat cars," the cavalry branch euphemism for tanks, in place of horses. While the brigade was formally organized without infantry (see Figure 13), the 6th Infantry was transferred to Fort Knox and mechanized in 1936 to support the brigade. The 7th Cavalry Brigade remained in the force structure until 1940, participating in numerous major exercises to validate the mechanized concept. In 1940, it was reorganized into the 1st Armored Division with the formal addition of the 6th Infantry Regiment. A provisional tank brigade, which had been formed early in 1940 from the infantry's tank units, was converted later the same year into the 2d Armored Division.

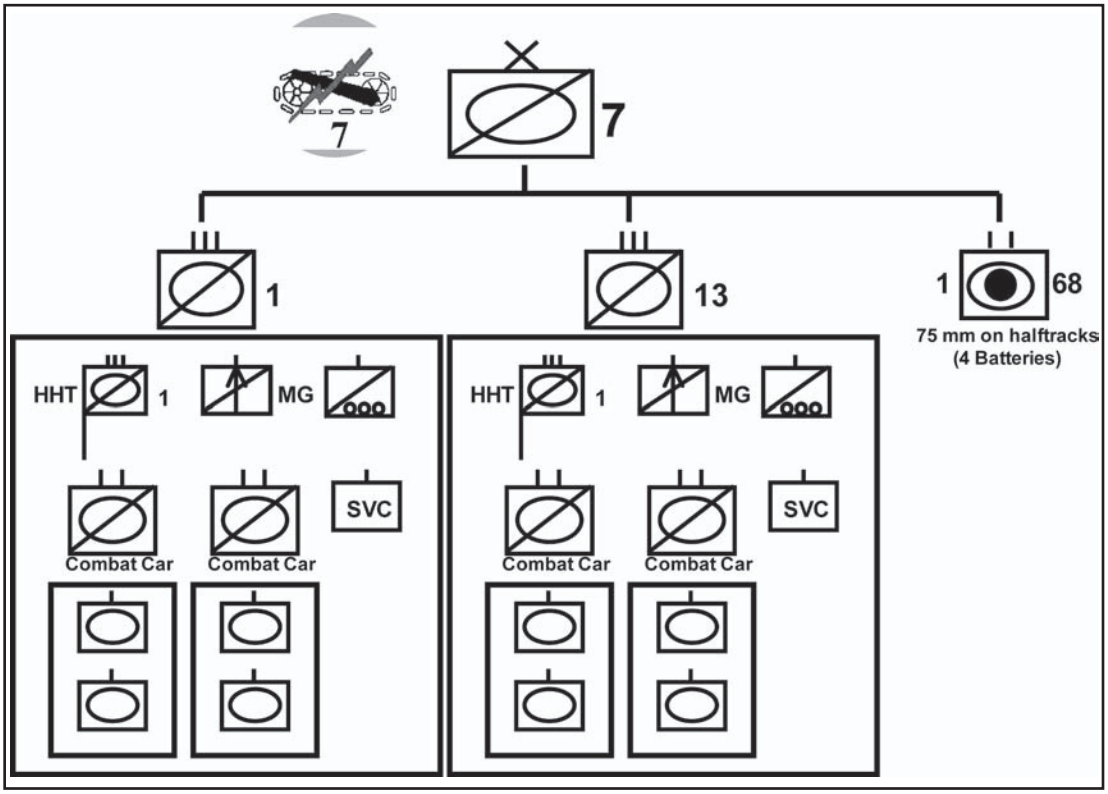

Figure 13. 7th Cavalry Brigade (Mechanized), 1938

Triangularized Divisions

As was previously discussed, after World War I, the Army retained the square division with its two brigades of two infantry regiments. However, since the end of the war, there had been a long-standing debate in the Army over the organization of the infantry division. Finally, between 1936 and 1939, the 2d Infantry Division experimented with a new triangularized infantry division structure, which was ultimately adopted Armywide starting in 1939. In this structure, one infantry regiment and the brigade level of command were removed from the division. The remaining three infantry regiments, commanded by colonels, were directly subordinate to the division commander. The conversion process took several years, with the National Guard, which was mobilized *in toto* in 1940-1941, gradually losing its brigades, until the last was gone in 1942. While some Regular Army units simply disbanded their brigades,

the two brigades of some Regular and all of the National Guard and ORC divisions, the latter being reactivated from scratch starting in 1942, were converted to form the new divisional headquarters company and either all or part of the new divisional reconnaissance troop.[3]

As an exception, one brigade, the 51st Infantry Brigade from the Massachusetts National Guard, did, however, manage to get into combat even while its parent division, the 26th, was being converted to the triangular structure. The 51st headquarters, having become excess by the new table of organization, was available to command the American force sent to garrison the French island of New Caledoniain the South Pacific in early 1942. As Task Force (TF) 6814, the brigade headquarters left New York in January 1942, arriving in New Caledonia, after a stop in Australia on 6 March 1942. Initially, the task force controlled two infantry regiments, two artillery regiments, and two engineer regiments. Upon arrival in New Caledonia, a major general assumed command of the augmented force. A third infantry regiment and two more field artillery battalions were added in April 1942, with the whole force being designated as the Americal Division on 24 May 1942. HHC, 51st Infantry Brigade, was retained as the division headquarters company, being redesignated so in May 1943. The division fought on Guadalcanal from October 1942 to February 1943, and later fought on Bougainville and in the Southern Philippines.[4]

During World War II, the 1st Cavalry Division was the only division to retain the two-brigade, square division structure. The Army ultimately dismounted the division and sent it to the Pacific to fight as infantry, with the tag "Special" added to its designation, while retaining the square structure throughout the war and even up to 1949, when the triangular structure was finally adopted. The wartime division's cavalry regiments, after being dismounted, were smaller in size than a standard infantry regiment, and were reorganized partially under infantry and partially under cavalry organizational tables.[5]

After the conversion to the triangular division, only two brigades were organized in the Army during World War II. The 1st Parachute Infantry Brigade was organized at Fort Benning, Georgia, in 1942. In 1943, the brigade was redesignated as the 1st Airborne Infantry Brigade and the 2d Airborne Infantry Brigade was also organized at Fort Benning. Both brigades supported airborne training, but after most nondivisional airborne units deployed overseas in 1944, the 1st Brigade was disbanded. The 2d Brigade deployed to the United Kingdom to support airborne training there and was disbanded in early 1945.[6]

The US Army fought in World War II with three commands at roughly the same level as the former brigade: the regiment, the group, and the brigade, which was still sparingly used as an administrative headquarters for pooled separate battalions, were still sparingly used. Both groups and regiments were commanded by colonels. While the regiment was composed of its own organic battalions and regimental-level companies, the group was merely a headquarters to which subordinate General Headquarters (GHQ) battalions could be assigned.[7] Table 5 illustrates the differences and similarities.

Apart from in the Americal and 1st Cavalry Divisions, for all intents and purposes, the maneuver brigade as a tactical command did not exist in the US Army in World War II. However, two organizations widely used in the war bear mentioning as the future history of the brigade later in the century was clearly descended from these two units: the armored division combat command and the regimental combat team.

Table 5. Regiment versus Brigade versus Group

	Commanded by	Subordinate Units	Type	Primary Use
Regiment	Colonel	Organic Battalions	Tactical and administrative headquarters	Tactical (except in old style armored divisions)
Group	Colonel	Nonorganic battalions	Administrative headquarters (except in the cavalry)	To control GHQ units
Brigade	Brigadier General	Nonorganic groups and/or battalions	Tactical and administrative headquarters	Administrative or to control a force tactically smaller than a division

The Combat Command of the Armored Division

The organization of a new type of combat division, the armored division, led to experiments with unit structure. The basic difficulty with the employment of armor was its inherent combined arms nature. An organizational structure of pure tank and infantry regiments would not be organized in the manner in which early war experience had shown armor was fought best: a combination of tanks, mechanized or armored infantry, and self-propelled artillery.

The armored division was reorganized numerous times during the early part of the World War II. Most revisions involved the ratio of tanks to infantry and the use of brigade and regimental headquarters. Additionally, the formation of combat teams of tanks and infantry at the battalion and brigade level was an operational imperative for the new armored force. Early versions of the division contained an armored brigade consisting of three subordinate armored regiments. An infantry regiment, which reported directly to the division commander, was also part of the organization.[8]

Eventually, two different armored division organizations were used in World War II. Both no longer had brigade headquarters, but employed a small brigade-equivalent headquarters, a combat command, to control the combat teams in which the division was supposed to operate. The "heavy" structure retained branch-specific regimental headquarters, as well as two combat commands, A and B, which were command and control headquarters without any organic units assigned to them. The two armored regiments consisted of six tank battalions. The armored infantry regiment in the heavydivision provided three infantry battalions. These battalions were then used to form combat teams and the teams were assigned on a mission basis to the two combat commands, one of which was commanded by a brigadier general, the other by a colonel. The regimental headquarters were, therefore, basically administrative and in combat practice, the armored ones were used to create task forces, as were tank battalions, and the infantry regimental headquarters was used to form an ad hoc third combat command headquarters. The 2d and 3d Armored Divisions fought the war under this organization, retaining it as they were already in combat when a new, "lighter" organization was adopted in 1943.[9]

The majority of the armored divisions in the US Army in World War II, 13 out of 15, fought utilizing the light division structure. This organization eliminated the regiment in the division. Three separate tank and three separate armored infantry battalions replaced the two

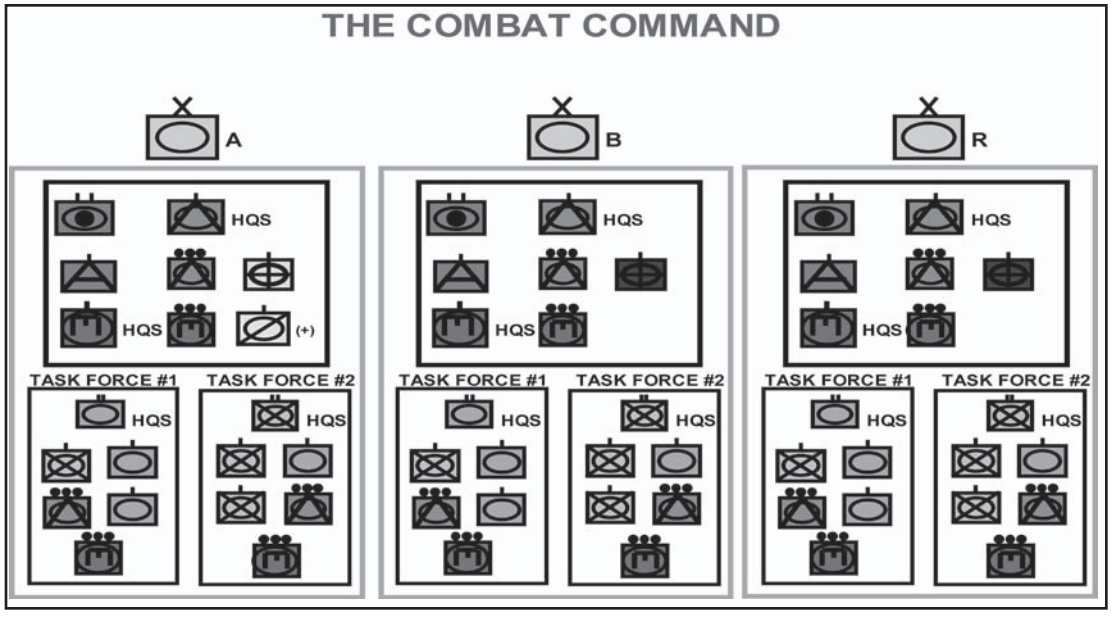

Figure 14. Typical Organization of a Light Armored Division Combat Command

tank regiments and infantry regiment. An A and a B Combat Command headquarters were part of the division, with a brigadier general and colonel commanding each respectively. A smaller headquarters, Combat Command Reserve (CCR), under an infantry colonel, was organized to command the divisional reserve or rear area. In practice, the many armored group headquarters which had been controlling the GHQ tank battalions before they were assigned to armies and corps, were then used to augment the small combat command headquarters and to make CCR into a full-sized headquarters equal with the other two. In some cases, combat commands fought separate from their parent division, either in support of infantry divisions or under a corps headquarters.[10]

The combat command was a unique organization. With no forces assigned to it, habitual attachments in the light division usually included a tank battalion, an armored infantry battalion and an armored field artillery battalion. With these, the commander usually formed two task forces by having each battalion swap a company. One task force would consist of two tank and one armored infantry companies and the other of two armored infantry and one tank company. The armored infantry usually was equipped with, and rode into battle on the M2 half track.[11]

The mission-oriented/task organized structure of the combat command often did not survive the crucible of combat. Many divisions retained the same organization for combat commands throughout the war. The detachment of combat commands to support infantry divisions or to otherwise fight independent of their parent divisions encouraged this. Nevertheless, some divisions did task organize, particularly those that used the reserve command as a reserve or rear area command. Some of these divisions rotated combat battalions through the reserve command as they got worn out in combat.[12]

Throughout World War II, there was a great debate over the ratio of infantry to tanks in the armored division. In the light division, the ratio was 1:1. In the heavy division, the ratio was

1:2. The heavy division, in particular, preferred to operate with an attached infantry regiment supported by truck companies to bring its ratio closer to that of the light division.

The European Theater of Operations General Board, which convened in 1945 to analyze combat operations and organization, recommended that the combat command be scrapped and replaced by a combined arms regiment. Despite, this, the postwar Army retained the combat command. After the war, a modified version of the light armored division structure was adopted Armywide, with an additional tank and infantry battalion assigned to the division, with the infantry battalions increased by one company each, and the combat command headquarters plussed up. Combat Commands A and B were now both commanded by brigadier generals. In 1954, the reserve command was redesignated as Combat Command C, and elevated to equal status with the other two commands, though it was still commanded by a colonel. Despite many proposed and tested changes in organization, the combat command remained the major maneuver element within the armored division up to 1963, with only the battalion designations changing in 1957 when the Army adopted the Combat Arms Regimental System (CARS), which discarded the separate battalion designation system used in the armored division up to that point, replacing it with a system based on battalions belonging to nontactical regiments.[13]

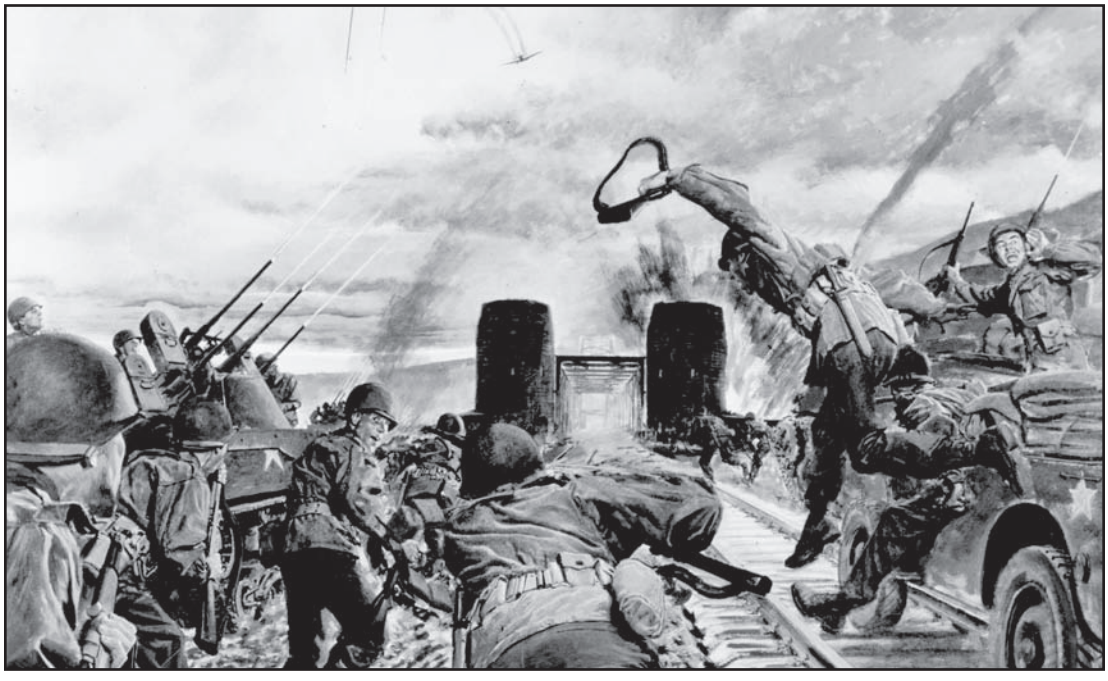

Figure 15. Remagen Bridgehead. *Army in Action Series, DA Poster 21-32*

Combat Command B, 9th Armored Division, at Remagen, Germany

In early March 1945, the US III Corps, consisting of the 1st, 9th, and 78th Infantry Divisions and the 9th Armored Division, was fighting in the Rhineland as part of the First Army. The corps' objective was to advance to the Rhine River and link up with elements of the US Third Army advancing from the south, in the process trapping as many German units as possible on the west bank of the Rhine.

On 6 March 1945, the 9th Armored Division ripped a big hole in the German line and ended the day at Stadt Meckenheim, 10 miles west of the major river obstacle, the Rhine. The German forces in the Rhineland, the 15th and 7th Armies, were in disarray, both trying to put on a show of defending every inch, to comply with Hitler's instructions, and at the same time retreat across the Rhine in good order before getting trapped on the wrong side of the wide river. Trapping the Germans was just what the Americans had in mind.

For 7 March 1945 the 9th Armored Division had the mission closing up to the Rhine and securing the key crossings of the Ahr River near where it met the Rhine. This would prevent the Germans from reaching the Rhine and set up a subsequent advance to the south to join up with units of Patton's Third Army near Coblenz, thus cutting off any Germans left on the wrong side of the Rhine. Combat Command A (CCA), with the 78th Division on its right, would cross the Ahr River at Bad Neuenahr to cut the Ahr Valley escape route of the German LXVII Corps. Combat Command B (CCB), commanded by Brigadier General William Hoge, would advance to the Rhine on the left of CCA, securing the west bank at the town of Remagen and taking easternmost crossings over the Ahr River for a follow on advance to link up with Third Army forces. Even though Remagen contained a large railroad bridge across the Rhine, planners gave little consideration to capturing the bridge intact.

Hoge divided his CCB into two task forces even though he had an extra armored infantry battalion. Attrition had given him only two seasoned commanders at the battalion/task force

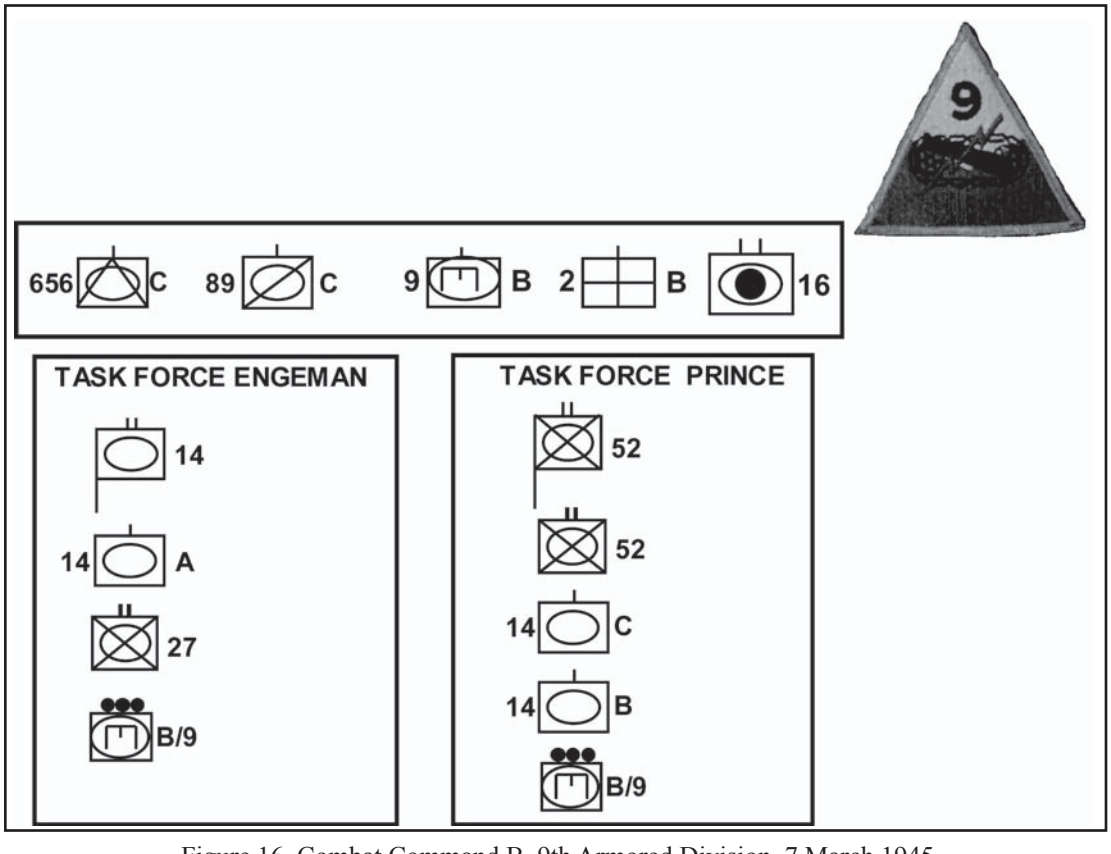

Figure 16. Combat Command B, 9th Armored Division, 7 March 1945

level. Lieutenant Colonel William R. Prince, commander, 52d Armored Infantry Battalion, led a task force consisting of his own battalion, two tank companies from the 14th Tank Battalion, and an armored engineer platoon. TF Prince was the combat command's main effort, advancing to the Ahr River on the left flank of CCA. Lieutenant Colonel Leonard Engeman, the commander of the 14th Tank Battalion, headed the other task force. TF Engeman consisted of Engeman's battalion headquarters and his Company A, and the 27th Armored Infantry Battalion and an armored engineer platoon from Company B, 9th Armored Engineer Battalion. On Prince's left, Engeman was to advance to the Rhine at Remagen, then advance south along the riverbank. The combat command's reconnaissance troop would screen CCB's left flank.

As mentioned previously, Hoge and Engeman gave little thought to capturing the railroad bridge at Remagen intact: the Germans had proven to be masters at blowing Rhine bridges up in the faces of advancing Americans. Therefore, Hoge was much more concerned with preventing the Germans from using the bridge to escape than he was about seizing it for his own use.

In Remagen, however, the rapid American advance over the previous week had left the Germans in disarray. Their LXVII Corps, whose main forces, the 89th Infantry Division and the 277th *Volksgrenadier* Division, were about to be trapped between the III Corps and the Third Army, had received responsibility for the bridge at Remagen from the German rear area authorities only on 6 March. The corps adjutant, Major Hans Scheller, assumed command of the bridgehead, but only arrived at Remagen minutes before the lead American elements arrived at the outskirts of the town. The explosives for the demolition of the bridge had only come 15 minutes before Scheller arrived and were half the required amount and of inferior quality. Scheller found a small infantry company at Remagen made up of a mix of seasoned veterans and local, overage residents, a small engineer company responsible for the demolition of the bridge, and part of an antiaircraft artillery battery. Planned reinforcements of two battalions were no longer available. Other German troops continued to stream across the bridge in a panic, making them unavailable for its defense. Neither Scheller nor the other officers at Remagen received any further instructions from German higher headquarters, even though reports from the troops crossing the bridge indicated that the Americans had broken through and would be at the river that day. Scheller alone would determine when to blow the bridge.[14]

CCB's advance on 7 March started off against only sporadic and uneven German defenses. Both task forces advanced rapidly throughout the morning. TF Prince captured the bridge over the Ahr River at Sinzig by noon. Meanwhile, TF Engeman, lead by Company A, 27th Armored Infantry Battalion, with a platoon of the newly fielded Pershing tanks from Company A, 14th Tank Battalion attached, arrived at the outskirts of Remagen around the same time Scheller arrived in the town to assume command. Second Lieutenant Karl Timmerman, commander of Company A, was amazed to see the bridge still standing and Germans streaming across it.

In short order, Engeman, Hoge, and Major Murray Deevers, commander, 27th Armored Infantry Battalion, joined Timmerman. A German prisoner captured at Sinzig had indicated, incorrectly as it was later to be shown, that the Remagen Bridge was scheduled to be destroyed at 1600, less than 5 hours away. Hoge seeing an opportunity to capture the bridge, ordered Engeman to make a try. Engeman, in turn, ordered the entire 27th Armored Infantry Battalion to advance to the bridge. The tanks and artillery would support in boldly attempting to seize the bridge. Hoge was blatantly ignoring new orders to advance south along the river toward Coblenz.[15]

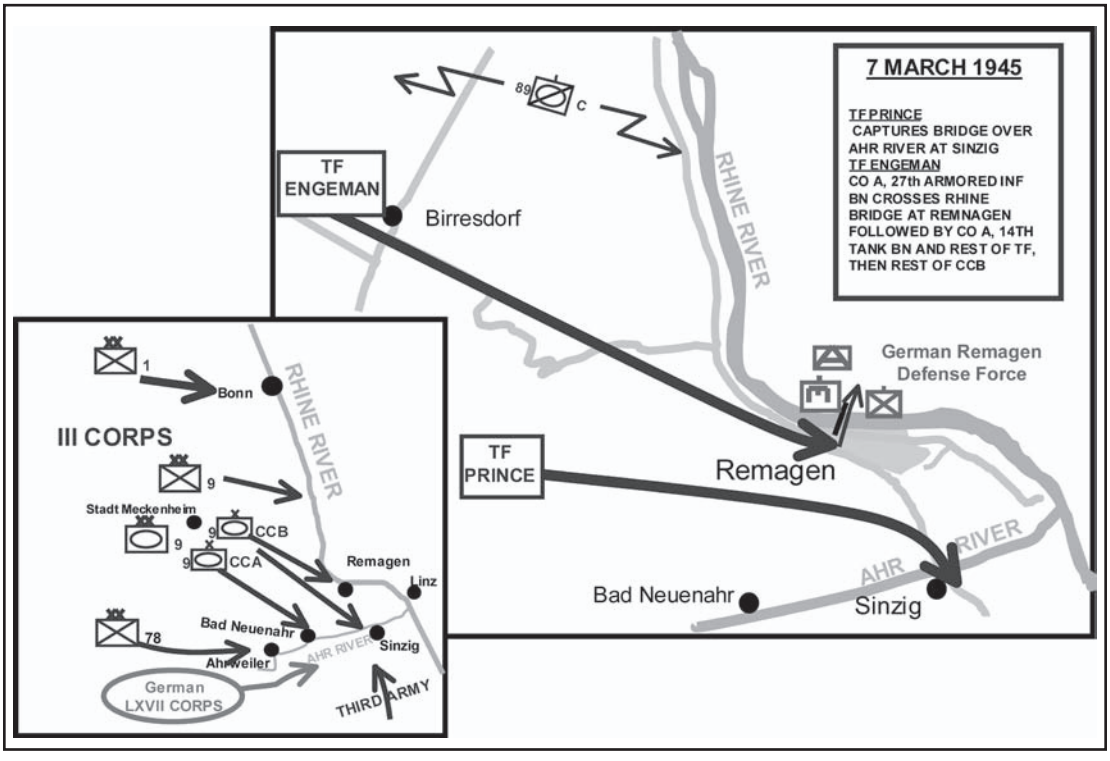

Figure 17. The Advance of CCB, 9th Armored Division, 7 March 1945

The three companies of the 27th Armored Infantry Battalion, led by Timmerman's Company A, and supported directly by Company A, 14th Tank Battalion, methodically advanced through Remagen, approaching the bridge before the 1600 deadline. The Germans responded to the American approach: Captain Karl Friesenhahn, the bridge demolitions commander, immediately, on his own initiative, blew a large antitank crater into the bridge's approach road. He then crossed the bridge to look for Scheller, losing 15 minutes when a tank round exploded near him, knocking him unconscious. Friesenhahn immediately requested and received permission to blow the bridge. However, even though the system had been tested several times, in the clinch it failed. The electrical firing circuit had been damaged. By this time the American forces had the bridge under small arms and machine gun fire. Nevertheless a German sergeant volunteered to go out onto the bridge and manually fire the emergency backup charges. He did so successfully, but when the smoke cleared from the explosion, the bridge still stood. Before the Germans could try a second charge, Timmerman's company was crossing the bridge, supported by Pershing tanks firing to suppress Germans shooting from the towers on each end of the bridge. The armored infantrymen crossed the bridge, clearing the towers as they went and the lead elements soon had a toehold on the opposite bank, capturing most of Scheller's men, who meekly surrendered when prompted from their shelter in a railroad tunnel next to the bridge.[16]

After the first troops crossed the river, Hoge immediately, on his own authority, ordered the whole 27th Battalion across. He also had some of his engineers go to the bridge and remove all traces of demolitions and set the wheel in motion for the erection of pontoon bridges to augment

the damaged railroad bridge. Then he contacted the division commander, Major General John Leonard, who sent the news up higher and relieved CCB of its mission on the Ahr River so that Hoge could get the whole combat command onto the far bank. After dark the tanks of the 14th Battalion crossed, followed by the rest of the combat command and elements of the 78th and 9th Infantry Divisions. The rest of the 9th Armored Division soon followed, then the whole III Corps. Hoge was the bridgehead commander until the first follow-on division commander arrived.[17]

The Germans committed sizeable forces to eliminate the bridgehead and utilized frogmen, V-2 rocket volleys, and newly fielded jet bombers. The bridge ultimately collapsed on its own 10 days after its capture. By then, pontoon bridges had replaced it and there was an extensive bridgehead was on the west bank. The German attempts to destroy the bridgehead failed. As a sign of the low state the German armed forces had reached in early 1945, Scheller was executed by a flying court-martial on 12 March 1945. Also executed for their roles at Remagen were the commanders of the engineer regiment and the battalion responsible for the bridge and an air defense officer who could not prove he had destroyed some of his experimental weapons before they could fall into American hands. The commander of the infantry company at Remagen was found guilty in absentia, he already being a prisoner of war (POW), while, ironically, the engineer company commander, Friesenhahn, who was directly responsible for the demolition, also already a POW, was found innocent, probably because of his status as a longtime member of the Nazi Party. Scheller had commanded at Remagen less than 4 hours when the bridge was crossed and had no control over the supply of demolitions, the American advance, or the troops assigned to him. He also had no means of counterattacking or communicating with higher headquarters except through personal contact. The only decision he had made was to delay the demolition of the bridge a few minutes to let a field artillery battalion cross.[18] Portions of the German LXVII Corps headquarters escaped across the Rhine south of Remagen, only to be committed and depleted in counterattacks against the bridgehead.

The capture of the bridge at Remagen was essential in speeding the end of the war. The depleted Germans were soon surrounded in the Ruhr pocket and American armored forces, including the 9th Armored Division advanced far to the east. The 9th itself ended the war in upper Bavaria near Weiden. CCB was later awarded the Presidential Unit Citation for its actions at Remagen. Hoge went on to command the 4th Armored Division and higher units. His flexibility in the use of his combat command validated the concept of its employment in a mobile, fluid combat environment. The lesson would not be lost on Army planners later when they were seeking a flexible organization below the division level to facilitate and execute combat operations on the modern battlefield in all kinds of units, not just armored ones. But that would not be until the early 1960s.

The Regimental Combat Team

With the adoption of the triangular infantry division, the regiment replaced the brigade as the basic subordinate maneuver command in the division. When a separate force of infantry smaller than a division was required for operations, the Army formed a new organization based on an infantry regimental headquarters. This was the regimental combat team (RCT). By the end of the war, almost all infantry regiments not assigned to a division were RCTs.

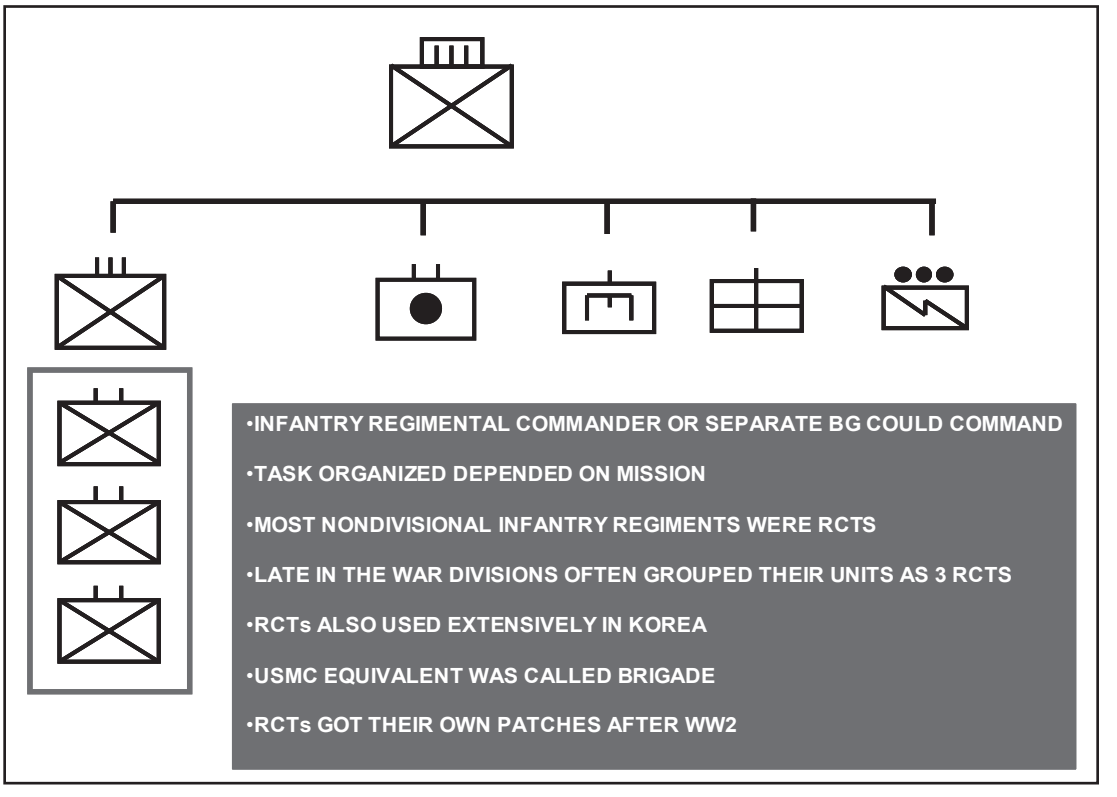

Figure 18. Typical Organization of a Regimental Combat Team

The RCT was an infantry regiment augmented with the support and combat support elements usually allocated within the division to support the regiment. With such augmentation, the RCT was capable of independent action and operations. Most of the time the colonel who commanded the infantry regiment commanded the RCT. Occasionally a brigadier general was sent to command an RCT. Typically an RCT consisted of, in addition to the infantry regiment, a field artillery battalion, engineer and medical companies, and a signal platoon. The organization was tailored for its particular mission, so different elements, such as antiaircraft artillery and tanks, could be added to groom the RCT for its particular assignment. The US Marine Corps also employed the RCT concept in World War II and after, but called their RCTs brigades.[19]

In the later stages of World War II, division commanders began organizing their three infantry regiments as RCTs within the division, giving them an appropriate slice of the division's combat and combat service support assets. This made it easier to detach regiments to other divisions or to attach additional regiments.

As with the combat command, the RCT concept lasted after World War II. RCTs were even authorized their own shoulder patches in the postwar era and were used extensively in the Korean War. The 187th Airborne RCT, consisting of parachute units detached from the 11th Airborne Division to fight in Korea, executed two combat airdrops during the war. The 5th RCT's structure, as of mid-1950, is given in Figure 18, to illustrate a typical RCT organization

of the Korean War era. The RCT concept was retained until the Pentomic reorganization in 1957 (see Figure 19).

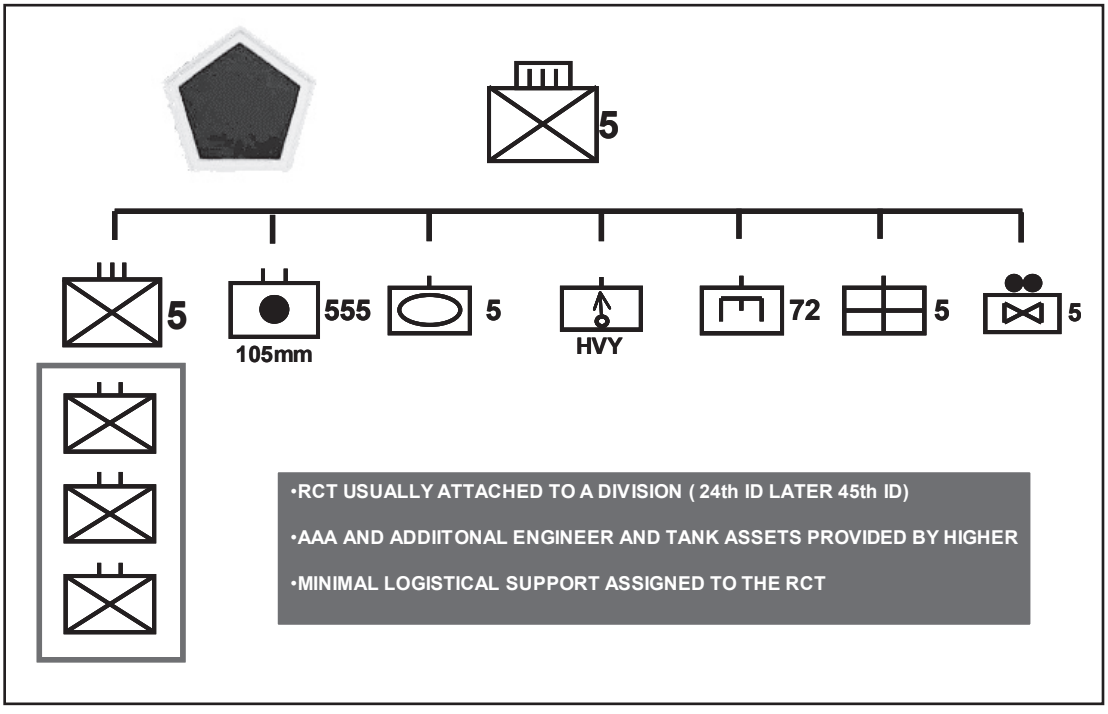

Figure 19. Organization of 5th RCT, Korea, 1950

NOTES

1. John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*. Army Lineage Series (Washington, DC: Government Printing Office, 1998), 64, 98.
2. Ibid., 122-23.
3. The Regular Army divisions converted to the new structure before 1941 were the ones that disbanded their brigades.
4. Shelby Stanton, *Order of Battle: US Army, World War II* (Novato, CA: Presidio, 1984), 184-85.
5. Ibid., 71-72; Wilson, *Maneuver and Firepower*, 191; John Wilson, *Armies, Corps, Divisions and Separate Brigades* (Washington, DC: US Army Center of Military History, 1999), 123, 125.
6. Wilson, *Firepower and Maneuver*, 169, 190-91; Wilson, *Armies, Corps, Divisions and Separate Brigades*, 135-36.
7. GHQ was the designation for units, usually battalions not assigned to a division or corps, but assigned as needed by the theater commander and his subordinates.
8. Glen R. Hawkins and James Jay Carafano, *Prelude to Army XXI: US Army Division Design Initiatives and Experiments 1917-1995* (Washington, DC: CMH, 1997), 8; *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis*. Combat Studies Institute (CSI) Report No. 14 (Fort Leavenworth, KS: CSI, 1999), 9.
9. Wilson, *Maneuver and Firepower*, 184-85, 198; The General Board, United States Forces, European Theater, *Organization, Equipment and Tactical Employment of the Armored Division*, Number 48, 3, A-2, A-3 (hereafter referred to as General Board.)
10. Ibid.
11. General Board, Appendix 1.
12. Ibid.
13. Wilson, *Maneuver and Firepower*, 227-28; General Board, 24.
14. Ken Hechler, *The Bridge at Remagen* (New York: Ballantine, 1957), 112-15.
15. Hechler, 125; US Army Corps of Engineers History Office, *Engineer Memoirs: General William M. Hoge*, EP 870-1-25 (Fort Belvoir, VA: US Army Corps of Engineers, 1993), 143-45.
16. Hechler, 135-39, 151-52. There are many theories as to why the bridge remained standing. Most likely a tank round damaged the connection to the main charge. See Hechler, 219-20.
17. *Engineer Memoirs*, 145-46.
18. Hechler, 130, 196-212.
19. In the 1990s, the USMC began referring to their reinforced regiments as RCTs.

Chapter 6

THE EARLY MODERN BRIGADE, 1958-1972

Pentomic Era

Following World War II, the US Army retained the organizational structures, with minor modifications, which had won that war. This organization—which did not include a maneuver unit called the brigade after the two brigades in the 1st Cavalry Division were eliminated in 1949—was also used to fight the Korean War in 1950-1953. Despite the success of the triangular infantry division in two wars, the Army radically changed the structure in 1958 by converting the infantry division to what became known as the Pentomic Division. Ostensively, the Pentomic structure was designed to allow infantry units to survive and fight on an atomic battlefield. Structurally it eliminated the regiment and battalion, replacing both with five self-contained "battlegroups," each of which were larger than an old style battalion, but smaller than a regiment. A full colonel commanded the battlegroup and his captains commanded four, later five, subordinate rifle companies.

The Pentomic Division structurally reflected that of the World War II European theater airborne divisions. This was no surprise since three European airborne commanders dominated the Army's strategic thinking after the Korean War: Army Chief of Staff General Matthew Ridgway, Eighth Army commander General Maxwell Taylor, and VII Corps commander Lieutenant General James Gavin. Though theoretically triangular in design, the two airborne divisions Ridgway, Taylor, and Gavin commanded in the war, the 82d and 101st, fought as division task forces reinforced with additional parachute regiments and separate battalions. For most of the Northern European campaign, both divisions had two additional parachute regiments attached to them, giving them five subordinate regiments, each commanded by colonels. Parachute regiments were smaller than standard infantry regiments by organization and attrition often made them even smaller, giving the 82d or 101st commander a perfect prototype of the structure that later became the Pentomic Division.[1]

The Pentomic organization, officially known as the Reorganization of the Current Infantry Division (ROCID) went through frequent modifications from its conception in 1954 to 1958 when it was finally adopted, and even after adoption. The original tables of organization (TOE) which were implemented included a small brigade headquarters commanded by the brigadier general assistant division commander. This headquarters was designed to provide command and control of attached units from the division as directed by the division commander, and to act as an alternate division command post. The concept was not really used in practice and when Pentomic TOEs were modified in February 1960, the brigade was eliminated.[2]

Except for minor structural modifications, the armored division, with its three combat commands, was unaffected by the Pentomic changes. The division was considered already well suited for atomic operations and senior armor commanders favored the flexible combat command structure.[3]

As part of the Pentomic reorganization, the regiment and separate battalion were eliminated as tactical units in the infantry, field artillery, and tank units. The battle group, and later the battalion, became the basic maneuver unit. These units were, however, designated as components

of historic regiments that became notional units. The new system, CARS, and a later variation of it, the Army Regimental System, is still in use by the US Army today. In this designation system, battalions in the infantry, armor, cavalry, and artillery, later field and air defense, were designated as numbered battalions belonging to a particular regiment. Separate companies would be lettered companies of a specific regiment. The regiments themselves were administrative entities, except in certain units, like armored cavalry, where the regiment was retained as a combined arms unit commanded by a colonel. This will be discussed in greater detail later in this work.

With the adoption of the new Pentomic divisional structure and the elimination of the regiment as a tactical unit, the force structure required a replacement for the now defunct RCT. The brigade was revived to fill this role. Accordingly, two brigades, numbered 1st and 2d, stationed at Fort Benning, and Fort Devens, Massachusetts, respectively, were established in the active Army force structure. The Army created three additional brigades. The 29th in Hawaii, the 92d in Puerto Rico, and the 258th in Arizona, were created in the Army National Guard to replace existing RCTs.

When established, the new nondivisional Pentomic brigade became the first permanently organized combined arms brigade in Army history. The brigade commander was a brigadier general and the brigade had two subordinate battlegroups commanded by full colonels, as well as a field artillery battalion and a support element, the brigade trains. Each battlegroup contained four rifle companies and a 4.2-inch mortar battery. While brigade organization varied in other units, the brigade established at Fort Devens in 1958, the 2d Infantry Brigade,

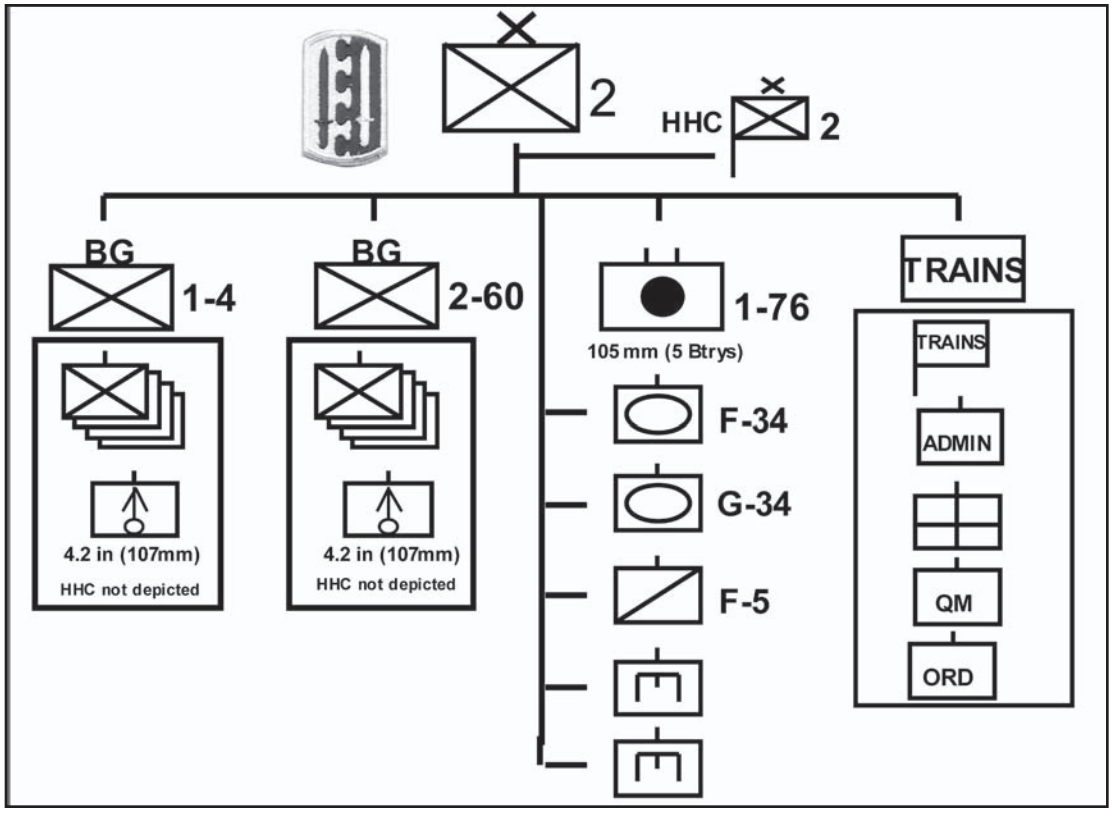

Figure 20. The Pentomic Brigade

also included two tank companies, two engineer companies, and a reconnaissance company. Its organization is illustrated in Figure 20.

ROAD Brigades and Airmobile Brigades

There were concerns about the Pentomic concept almost immediately. The span of control for the division commander was great and not compensated by advances in communications technology. Armored personnel carriers (APCs) were centralized in a transportation unit and assigned with drivers to infantry units as needed, though only one battle group at a time could be so mechanized. The command structure jumped from captain to colonel without any intermediate levels of command in between. And the infantry and armored divisions remained in two completely different organizational structures.

While the Army adopted the inventive Pentomic structure, most of the rest of the world's armies retained or adopted more traditional organizations. In the British army, the brigade had traditionally contained subordinate battalion-sized units, called regiments in the armored force, cavalry, and artillery branches, and called battalions in the infantry. During World War II, brigades were augmented with support elements and called brigade groups. To the present day, the British have maintained this concept. Brigades and brigade groups have, since 1945, become the basic operational unit in the British army in lieu of the division.[4]

When the new West German army, the *Bundeswehr*, was established in the mid-1950s, it, like the French army of the same era, used the combat command structure of the US armored division. However, starting in 1957, the Germans reorganized into a brigade structure. The brigades were combined arms organizations and fixed in structure, with permanently assigned combat battalions and support elements. While brigades still belonged to divisions, the brigade here too replaced the division as the *Bundeswehr*'s basic tactical unit at the operational level.[5]

The US Army's Continental Army Command (CONARC) began formal studies for a new divisional structure in December 1960, only two years after the adoption of the Pentomic structure. In 1961, President John F. Kennedy approved CONARC's proposal, the Reorganization Objective Army Divisions (ROAD), for immediate implementation. The Army was reorganized between 1961 and 1963.[6] With later modifications, the ROAD structure is basically still in use in the Army today.

Unlike the previous organizational structure, ROAD created a universal divisional structure, which depending on the mix of combat battalions, could be armored, mechanized infantry, infantry, or airborne. ROAD restored the brigade as a command, both in divisions and separately. ROAD established three brigade headquarters in each division, the 1st, 2d, and 3d. The new brigade combined features of the former divisional regiments and the armored division's combat commands. Like the former regiments, the new divisional brigades controlled battalions, were commanded by colonels, and reported directly to the division commander. Like the combat command, the ROAD brigade was a headquarters with no organic troops, being task organized by the division commander for particular missions. The brigade was not to be part of the division's administrative or logistical chains of command. Maneuver combat battalions (infantry, mechanized infantry, armor) would be assigned to the brigade in a mix of from two to five battalions, to complete specific missions. One of three divisional direct support field artillery battalions would normally be assigned to support each brigade. A slice of combat support and combat service support elements assigned to the division would be placed in support of the brigade.[7]

A new type of infantry, mechanized, was established with the ROAD reorganization. This type of infantry was the lineal descendent of the armored infantry formerly found in the armored divisions. Unlike the old armored infantry, mechanized infantry battalions could now be part of organizations other than armored divisions. And unlike the APC-mounted infantry in the Pentomic division, the new mechanized infantry had its APCs assigned directly to the unit, with one per infantry squad. In brigades with a mix of tank and mechanized infantry battalions, the old task force concept was codified into battalion task forces and company teams. A battalion task force was a tank or mechanized infantry battalion with one or more companies of the battalion cross-attached to an equivalent battalion of the other branch. Therefore, a battalion task force could consist of a mix of tank and mechanized infantry companies. Once formed, a battalion task force could in turn combine mixes of tank and mechanized infantry platoons under its companies, the resulting unit being referred to as a company team.[8]

In armored divisions, lineages for the new brigades were created by the redesignation of the former combat commands. In infantry, mechanized, and airborne divisions, the third brigade was created from scratch or from the former divisional headquarters company, which had been eliminated in the Pentomic division. The 1st and 2d brigades were created based on the lineages of the old square division brigades. While some of these had been disbanded, many had been converted to all or part of the divisional reconnaissance troop in the triangular division. Some Army National Guard divisional brigades were given special numbers, to reflect historical designations. This was done particularly in divisions that were formed of contingents from multiple states. Active Army separate brigades were named using the designations of former Organized Reserve/Army Reserve divisional brigades no longer in the force structure.

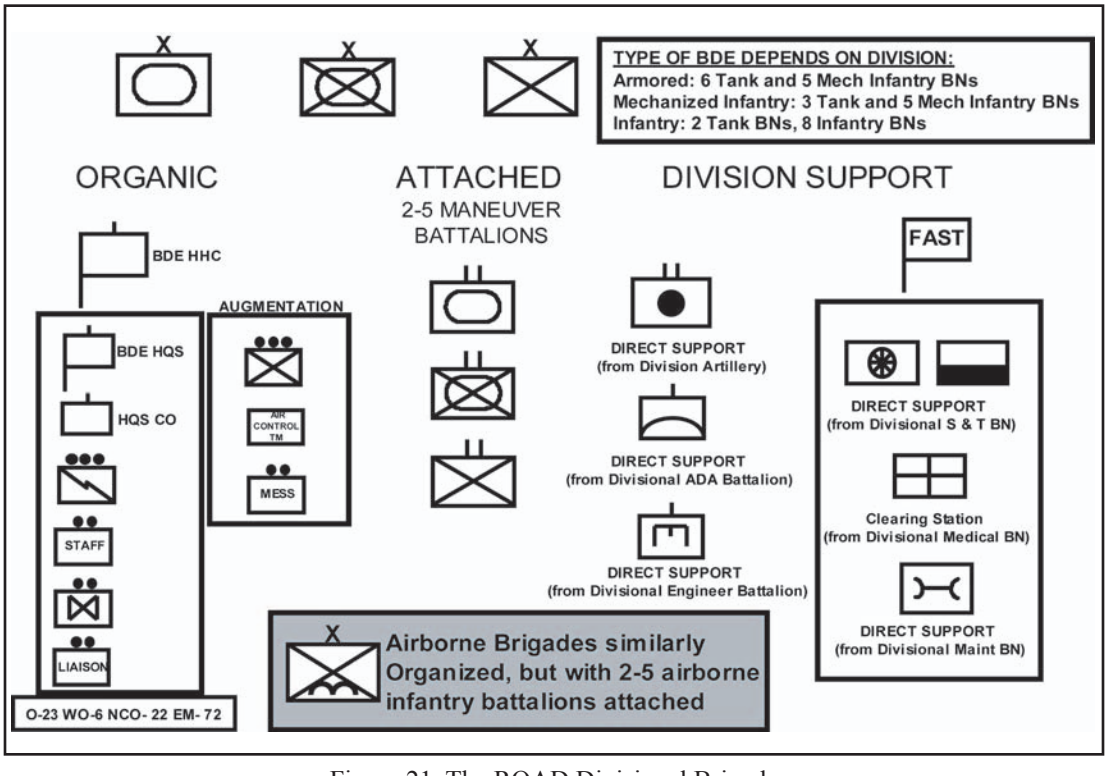

Figure 21. The ROAD Divisional Brigade

Four separate infantry brigades were also created from inactivating Army Reserve divisions, designating them with the lower brigade number formerly associated with the division under the square organization (before 1942). In both cases this was done so as to give the brigades numerical designations high enough not to be confused with the numbers used in divisional brigades. ARNG separate brigades were designated either with old square division brigade designations or, if they were replacing an inactivated ARNG division, by using the former division number. Several ARNG brigades were designated with the number of former infantry regiments that had been replaced in the force structure. Army Reserve training divisions, which formerly had training regiments directly under the division headquarters, concurrently converted these regiments to sequentially numbered brigades. A complete listing of all brigades since 1958 may be found in Appendix 4.

Separate, nondivisional brigades were part of the ROAD concept from the start for missions requiring less than a division or for the reserve components. Unlike divisional brigades, which were commanded by colonels, the separate brigade retained the tradition of being commanded by a brigadier general. While planners envisioned these brigades to be like divisional ROAD brigades, a bare bones headquarters with two to five attached maneuver battalions, and support provided either by a corps or a division to which the brigade would be attached, one brigade, the 173d Airborne Brigade on Okinawa, was established from the start with organic support troops. This was because Army planners envisioned the airborne brigade as a special task force that could deploy rapidly and act independently. Within a year similar support elements were applied to all separate brigades. As with the earlier RCTs, the separate brigades were also given their own unique shoulder patches.[9]

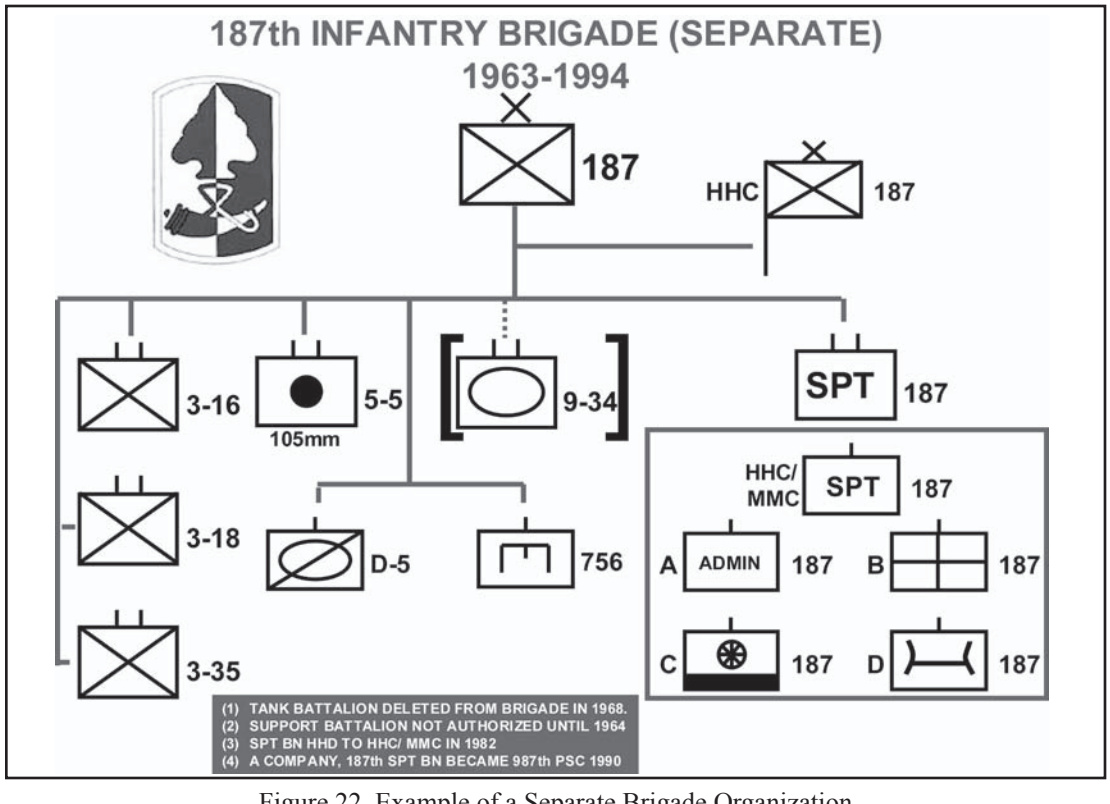

Figure 22. Example of a Separate Brigade Organization

The standard separate ROAD brigade, thereafter, in addition of having between two and five maneuver battalions, consisted of a small headquarters company, an armored cavalry troop, an engineer company, a direct support field artillery battalion, and a support battalion. The support battalion consisted of a small headquarters and administrative, medical, maintenance, and supply and transportation companies. The 173d Airborne Brigade additionally contained a separate tank company. An example of a typical brigade organization is found in Figure 22. The brigade illustrated was a US Army Reserve (USAR) brigade located in New England.

While the Army reorganized under ROAD at Fort Benning, an experimental organization was formed to test the incorporation of the helicopter directly into the divisional structure. This test unit, designated the 11th Air Assault Division, was ultimately redesignated as the 1st Cavalry Division (Airmobile) in mid-1965, becoming an additional type of ROAD division: the airmobile division. The airmobile division was designed with helicopter, and originally fixed wing, assets to provide operational troop movements and fire support. Two aspects of the organization and employment of the 1st Cavalry Division (Airmobile) relates specifically to the employment of brigades. One brigade of the division, including a brigade headquarters and three of the infantry battalions, was qualified additionally as paratroopers, along with one of the field artillery battalion and slices of the division's support command. This unique composition of one brigade within a division lasted only until 1968, when the paratrooper qualification was dropped.[10] The second brigade-specific feature of the airmobile division was in its inherent structure. Assigned to the division was an aviation group which consisted of two assault

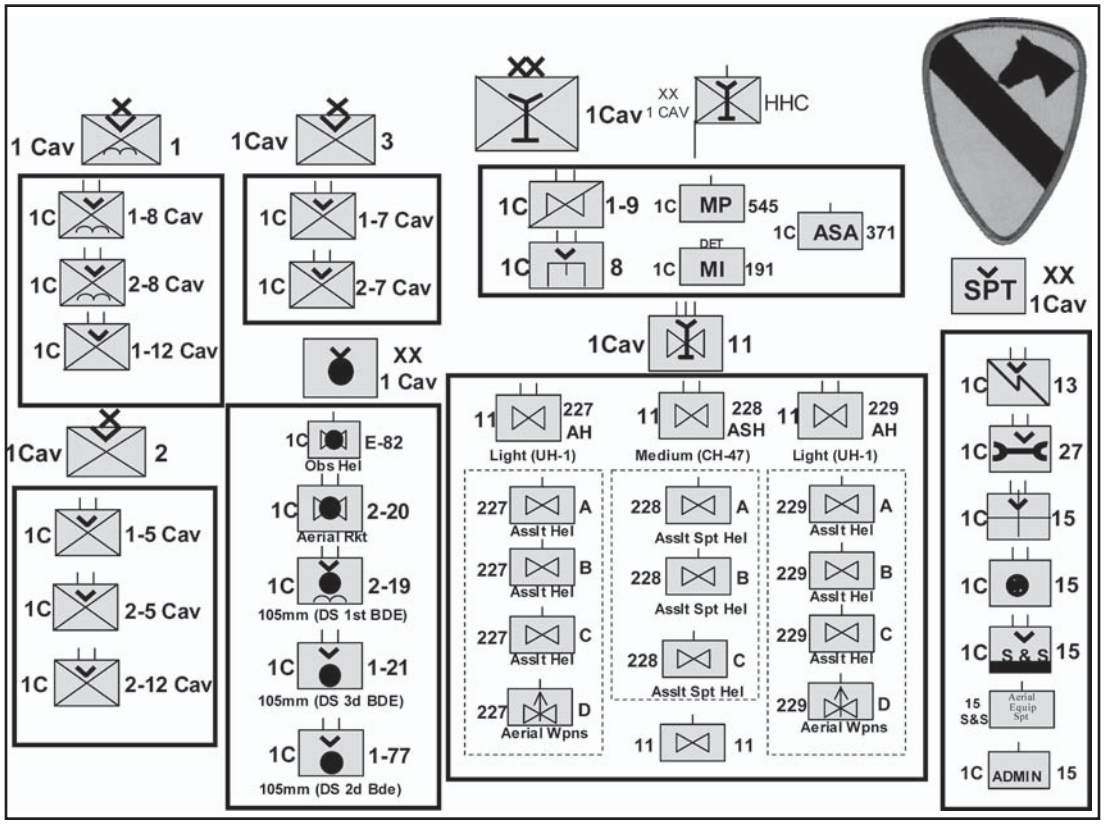

Figure 23. The First Cavalry Division (Airmobile), 1965

helicopter battalions equipped with the UH-1 Huey light transport helicopter and one assault support helicopter battalion equipped with the medium CH-47 Chinook transport helicopter. Each aviation battalion could carry a comparable sized infantry or artillery unit. Accordingly, the airmobile division was designed so that the aviation assets could move only one brigade at a time. The division, therefore, was naturally fought by maneuvering brigades. One brigade was in contact, one was in reserve, and one was reequipping and guarding the division's large base camp. The 1st Cavalry Division's organizational structure upon its deployment to Vietnam in 1965 is illustrated in 23.[11] In 1968 the 101st Airborne Division became the second Army airmobile division, a role it continues to the present day, with the tag "airmobile" being changed to "air assault" in 1974.[12]

Figure 24. The 196th Infantry Brigade Ships Out to Vietnam, Boston, 1966

The Brigade in Vietnam

The ROAD reorganization had barely been effected when it was given its first test in Vietnam. Earlier units that arrived were either separate brigades or brigade elements of deploying divisions. The first Army unit deployed was the 173d Airborne Brigade in May 1965, followed closely by the 1st Brigade, 101st Airborne Division, and 2d Brigade, 1st Infantry Division. From then until the end of the US ground involvement in the war in 1972, 18 divisional brigades, including one detached from its division for a long period of time, five separate brigades, including three later made part of the Americal Division, and two brigades detached from their parent division served in Vietnam at one time or another. In June 1972, the 196th Infantry Brigade departed Vietnam as the last brigade in country.

In many ways Vietnam was a war of brigades. Brigades, especially in the early days, were moved from one part of the country to another or from one mission to another with a flexibility and celerity that quickly validated the ROAD concept. The flexibility of the ROAD brigade

with its subordinate, self-contained battalions, greatly facilitated the use of the helicopter to transport infantry. Several times in the course of the war, brigade elements operated far from their parent unit for extended periods. In one case, in August 1967, the 4th and 25th Infantry Divisions swapped brigades including subordinate infantry, armor, and field artillery battalions, with the brigades changing designations.[13] One division was created in Vietnam by assigning three separate brigades, the 11th, 196th, and 198th Light Infantry, to a single new command. The new division so cobbled together, was given the designation of the Americal Division, as that division had been created in World War II under similar circumstances. The early organization of the Americal, whose official designation was 23d Infantry Division, is illustrated in Figure 24. The division was later reorganized as a standard ROAD division, except that its brigades retained the 11th, 196th, and 198th designations. The Americal Division also retained an attached aviation group throughout its stay in Vietnam.[14]

For duty in Vietnam, both separate and divisional brigades were modified, either prior to deployment or in country. A new type of brigade, the light infantry brigade, was created specifically for service in the counterinsurgency environment of Vietnam. The brigade contained less than half of the number of vehicles found in the standard infantry brigade. The infantry battalions were organized with a structure similar to the airmobile infantry battalions of the First Cavalry Division, to facilitate the conduct of airmobile operations.[15] Most light brigades had four assigned infantry battalions, instead of the more typical three.

There were additional attachments found in Vietnam. Early on brigades acquired provisionally organized long-range patrol companies. These were later standardized and then redesigned as ranger companies. The 173d Airborne Brigade received its own aviation company in

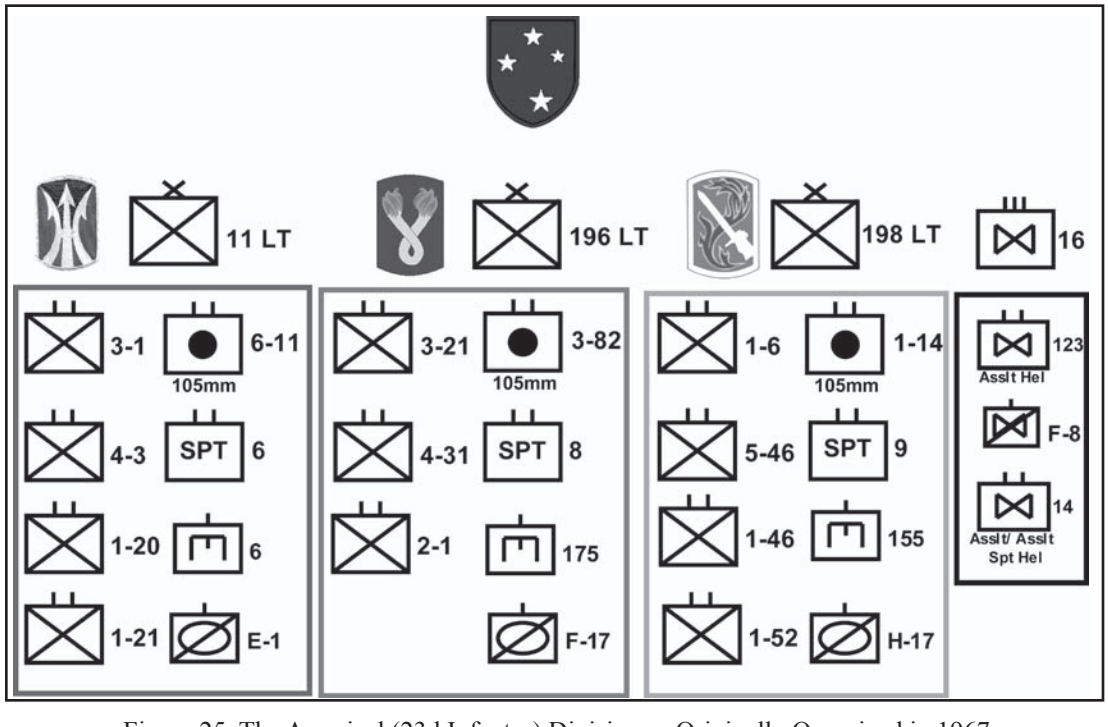

Figure 25. The Americal (23d Infantry) Division as Originally Organized in 1967

1966, making the brigade a de facto airmobile brigade. During the course of the war, several divisional brigades were detached from their parent divisions and deployed to Vietnam. These separate divisional brigades were given a slice of division support elements, typically a direct support field artillery battalion, an engineer and a signal company, and an armored cavalry troop. For these geographically separate brigades, the parent divisions also organized a provisional support battalion made up of companies from the division support battalion, similar to those found in the support battalion of the separate nondivisional brigades, i.e., an administrative, medical, maintenance, and supply and transportation company.[16]

The ubiquitous use of the helicopter and the area, rather than linear, nature of warfare in Vietnam gave brigade operations a unique flavor. Typically a brigade in counterinsurgency mode would be given a geographically based tactical area of operations (TAOR). In its TAOR, a brigade would defend any fire support bases (firebases or FSBs) established in the TAOR, as well as any helicopter landing zones (LZs) and any other larger bases located in the TAOR. A brigade would also secure any land supply routes between the bases and to sources of supply outside the TAOR. Aside from these defensive missions, the brigade conducted offensive operations within its TAOR to destroy any Communist forces and assisted in the internal development and defense of the civilian populace and infrastructure in the TAOR.[17] In Vietnam, the brigade usually fought from a series of LZs and FSBs. Initial operations were designed to find and fix the enemy. FSBs would be established within artillery range of probable or known enemy positions and artillery batteries would be airlifted into the FSBs. Follow-on operations would air assault troops into LZs whose locations were designed to surround the enemy. Then the brigade commander would coordinate the maneuver of the battalions toward the enemy positions. Once the exact positions were found, the battalions would either assault them directly or attack them by fire support assets followed by an assault, usually from two directions. A good example of this type of operation can be found in the actions of the 3d Brigade, 101st Airborne Division (Airmobile), in the A Shau Valley in May 1969, this action codenamed Operation APACHE SNOW, culminated in the Battle of Hamburger Hill, which is highlighted in the next section of this chapter.

Sometimes combat operations in Vietnam consisted of multiple brigades and a combination of air assault and ground assault operations. A good example of this was the first phase of Operation JUNCTION CITY, conducted by the 1st and 25th Infantry Divisions in War Zone C, Tay Ninh province, in February and March 1967. Executed over two years earlier than Operation APACHE SNOW and several hundred miles to the south, Operation JUNCTION CITY was a much larger operation in both concept and execution. In fact, its initial air assault, which utilized 249 helicopters to insert eight battalions, with a ninth parachuted in by Air Force aircraft, was the largest airmobile operation of the Vietnam War. The nine battalions were under the control of three brigade headquarters. The three brigades, plus another in the southwest which had deployed via ground transportation, were maneuvered to set up a massive cordon around War Zone C, the sparsely settled, heavily vegetated area of Tay Ninh province directly adjacent to the Cambodian border. In 1967 the major headquarters controlling Communist operations in the south, Central Office for South Vietnam (COSVN), was believed to be in War Zone C. The 9th Viet Cong (VC) Division also operated out of War Zone C, though the 1st Infantry Division had, in 1966, kept the division's two subordinate regiments away from the heavily populated areas to the south and east.[18] Two additional

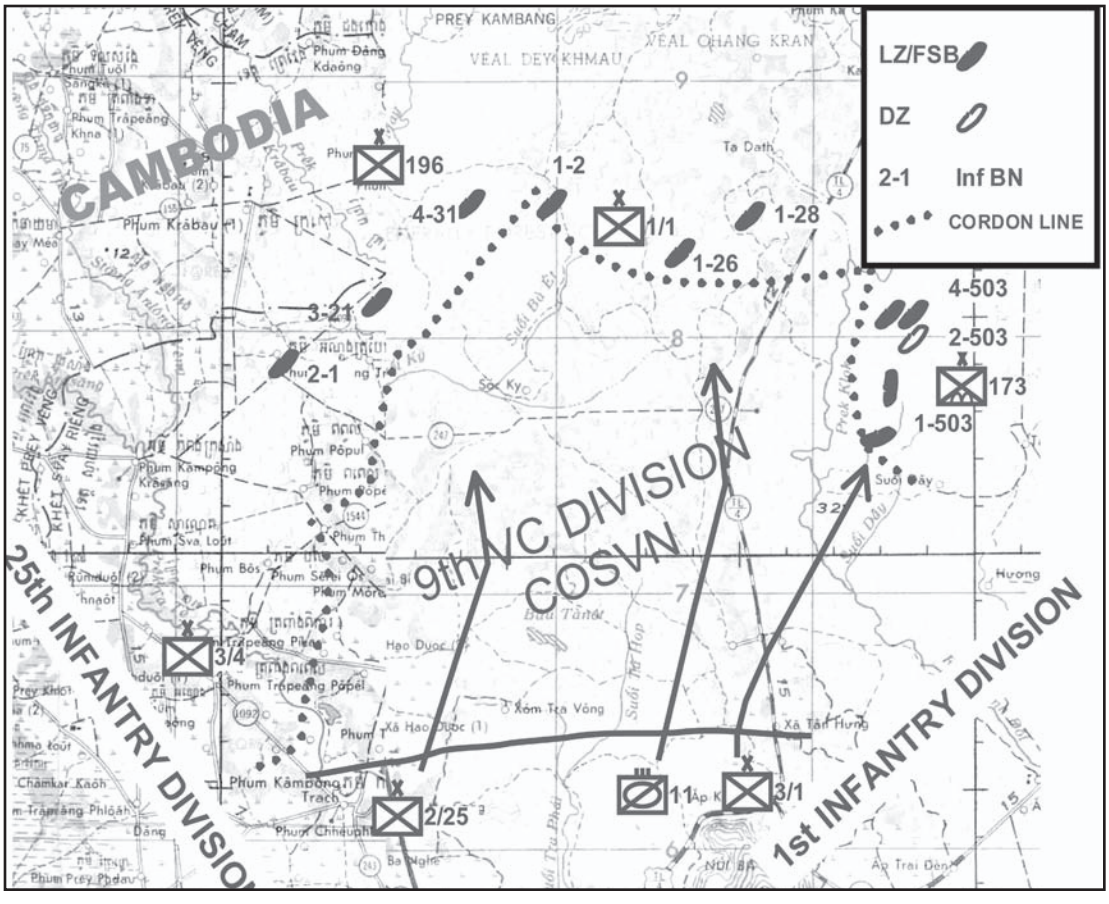

Figure 26. Phase 1 of Operation JUNCTION City, February 1967

brigades, along with an armored cavalry regiment (ACR), executed a ground attack the next day from the south into the area previously cordoned off. Two divisions, the 1st Infantry and 25th Infantry, controlled the six brigades and one ACR assigned to the operation under the overall command of the corps-equivalent headquarters, II Field Force Vietnam. The brigades included a separate infantry, a separate airborne brigade, and a brigade from the 4th Infantry Division attached to the 25th Division.[19]

While only traces of COSVN were found, the operation battered the 9th VC Division, whose response, aside from fleeing, was a series of small scale assaults on US positions that appeared to be isolated, but in fact were not. Operation JUNCTION CITY validated the flexibility of the ROAD brigade concept with its mix of forces, ground and air assaults, and paratrooper drops. This flexibility was the hallmark of US brigade operations in the Vietnam War.

Foreshadowing postwar plans for brigades of different capabilities in the same division, the Army organized one brigade of the 9th Infantry Division as a special amphibious force to operate in the densely populated and enemy infested Mekong River Delta area south of Saigon. The 2d Brigade, 9th Infantry Division, referred to as the Mobile Riverine Force (MRF), consisted of the 3d Battalion, 47th Infantry; 4th Battalion, 47th Infantry; 3d Battalion, 60th Infantry; and the 3d Battalion, 34th Artillery; along with slices of divisional support elements.

The MRF was specially organized for its mission in the United States prior to deployment and served on the Mekong River from 1967 to 1969. The Army selected a brigade-sized unit for the mission because experience had taught that the brigade was the smallest unit capable of operating independently in the Delta. The force worked out of a base on an island in the river at Dong Tam. The Navy directly supported the brigade with five self-propelled barracks ships, two landing ship, tank (LST) landing craft, two large harbor tugboats, and two landing craft repair ships. Additionally, two Navy river assault groups, each capable of transporting a battalion at a time, provided mobility for the force. The river assault groups, which were redesignated later as river assault squadrons, were each equipped with 52 LCM-6 armored landing craft, for use as troop carriers.[20]

The operations of the MRF were highly successful. Viet Cong forces were pushed away from the populated areas of the Delta and the main roads were kept open, allowing farm produce to reach markets in Saigon. The brigade was so successful, that the 9th Division's headquarters eventually moved to Dong Tam as the brigade shifted operations farther south. During the 1968 Tet Offensive, the MRF successively ejected communist forces from the cities of My Tho, Vinh Long, and Can Tho, effectively saving the Delta area from enemy takeover. The brigade was a unique organization in the Army and in Vietnam.[21]

Operation APACHE SNOW: Brigade Employment in Vietnam

The 101st Airborne Division (Airmobile) executed Operation APACHE SNOW in the northern portion of the A Shau Valley in Thua Thien province between 10 May and 7 June 1969 with its 3d Brigade and elements of two regiments from the Army of the Republic of Vietnam's (ARVN) First Infantry Division. This was the middle of three operations that the 101st conducted in different sections of the narrow, 30-mile long valley in 1969.

In May 1969, the A Shau Valley, located on the Laotian border west of Hue, had been a North Vietnamese-controlled sanctuary since a Special Forces camp had been driven out of the valley in 1966.[22] Since then, the valley and its adjoining jungle-covered ridgelines had become a major Communist base area and supply route into the coastal regions of Thua Thien province, Hue, and Quang Tri province to the north. The enemy forces that attacked Hue city during the Tet Offensive in 1968 had assembled in the A Shau Valley and infiltrated out of there. The valley's location next to the safe haven of Laos and the Ho Chi Minh Trail made it of great importance to the North Vietnamese. Later in 1968, the 1st Cavalry Division (Airmobile) had conducted operations in the valley, but did not establish a permanent presence there. After the air cavalry's departure, the Communists restored their infrastructure, which included a main supply route running down the middle of the valley on an improved road, Route 548. Jungle-covered mountains surrounded the valley itself. One of these, the 937-meter high Dong Ap Bia, would become the focus of the 3d Brigade's activities during Operation APACHE SNOW.

The 3d Brigade, commanded by Colonel Joseph Conmy, consisted of three airmobile infantry battalions: 1-506th Infantry, 2-506th Infantry, and 3-187th Infantry. Each battalion had one or more companies detached for FSB security or in a reserve role during the operation. One field artillery battalion, 2-319th Artillery, was in direct support of the brigade, with an additional three batteries in general support, reinforcing. The divisional aerial rocket artillery battalion was also in direct support of the brigade. In addition, an engineer company and two assault helicopter companies from the division's 160th Aviation Group were supporting the brigade.

Troop A, 2-17th Cavalry, from the divisional air cavalry squadron, support the brigade with air reconnaissance and related activities. Companies from the division medical, maintenance, and supply and service battalions were assembled to support the brigade as Forward Service Support Element (FSSE) 3. Supporting brigade operations to the north was the 1st ARVN Infantry Regiment of the 1st ARVN Infantry Division.[23]

The objective of Operation APACHE SNOW was to locate and destroy any enemy found in each battalion's assigned sector, destroy any enemy infrastructure, and, if necessary, fix the enemy in place until reinforcements could arrive. The operation was called a reconnaissance in force (RIF), as the North Vietnamese locations, bases, camps, and defensive positions, would have to be found as the operation progressed. Battalions normally separated into company-sized elements to conduct RIF operations, massing as a battalion as necessary. At the brigade level, airmobile assets would be used to shift battalions to large enemy locations. LZs for the battalions were selected in the hilly area west of the A Shau Valley on the Laotian border, the theory being to get US forces between the Communists and their Laotian sanctuary area, to which, upon contact, they would naturally tend to try to move. All operations were conducted within the range of preemplaced field artillery located at FSBs established in the hills on the eastern side of the valley and at one FSB, Currahee, built on the valley floor south of the area where the battalions were to operate.[24]

Unidentified enemy forces were known to be located in the northern A Shau Valley. The large troop concentration near Dong Ap Bia turned out to be the 29th North Vietnamese Army (NVA) Regiment, a well-trained and reconstituted unit that had not been located since 1968. Two battalions, the 7th and 8th, plus part of the regimental headquarters, defended a hilltop fortified area with extensive bunker and trench line complexes. Farther to the northwest in the A Shau Valley were elements of the 6th NVA Regiment's 806th Battalion and the separate K10 Sapper Battalion.[25]

In preparation for the operation, the infantry battalions were shifted from LZs and FSBs near Hue to FSBs Blaze and Cannon, located on hilltops east of the A Shau Valley near the main ground supply route into the area, Route 547. The brigade command post moved from its large base camp near Hue, Camp Evans, to FSB Berchtesgaden. Three new or formerly abandoned FSBs were quickly built to support the operation: FSB Bradley, located to the north and to be primarily used by the ARVN 1st Regiment; FSB Airborne, located in the hills overlooking the valley from the east, north of FSB Berchtesgaden; and FSB Currahee, built on the valley floor itself at its broadest section, 3,000 meters wide near the village of Ta Bat, . The new FSBs, plus FSBs Cannon and Berchtesgaden, were designed to be mutually supporting and allow the entire area of operations to be within the range of field artillery. On 9 May (D-1), 10 batteries were shifted to these FSBs to support the initial insertions of the infantry.

As mentioned above, the brigade command post was located at FSB Berchtesgaden during the operation. The brigade commander controlled the overall operations of the brigade through the extensive use of nonsecure and secure FM radio, with VHF radio being used between the brigade and division. He augmented radio communication with personal observation from a command and control light observation helicopter and personal visits to unit locations.

Logistics support for the brigade in Operation APACHE SNOW was tailored for the operation. While most logistics assets remained back in the division support command base

camp near Hue, medical support and ammunition resupply was brought forward to FSB Blaze. Route 547, the improved road built by Army engineers from Hue to the A Shau Valley, provided a ground main supply route up to FSB Bastogne, several miles short of FSB Blaze. From FSB Bastogne forward, almost all supplies were airlifted, primarily by medium cargo helicopters, the CH-47 Chinook.[26]

On D-Day, 10 May, 65 UH-1H Huey helicopters airlifted the four battalions in consecutive company-sized lifts from FSBs Blaze and Cannon into new LZs on the Laotian border in the jungle area west of the A Shau Valley proper. An extensive 70-minute artillery, aerial rocket, and air support preparation preceded the combat assaults.[27] The battalions all landed without contact and immediately commenced company-sized RIF operations to find the enemy forces known to be in the area. While all four battalions received sporadic contact of one kind or another, one of the companies of 3-187 was stung by contact with entrenched North Vietnamese troops below the summit of Dong Ap Bia, a 937-meter high mountain that dominated the northern A Shau Valley from the west.

Lieutenant Colonel Weldon Honeycutt, 3-187, had a tiger by the tail. But it took him and his brigade commander, Conmy, several days to realize the extent of the enemy force atop Dong Ap Bia. Honeycutt initially continued RIF operations with his other companies and had a single company assault the hilltop on 11 May. When this failed, he went with a two-company assault on 12 May. The terrain and the enemy hindered coordination and this attack also failed.

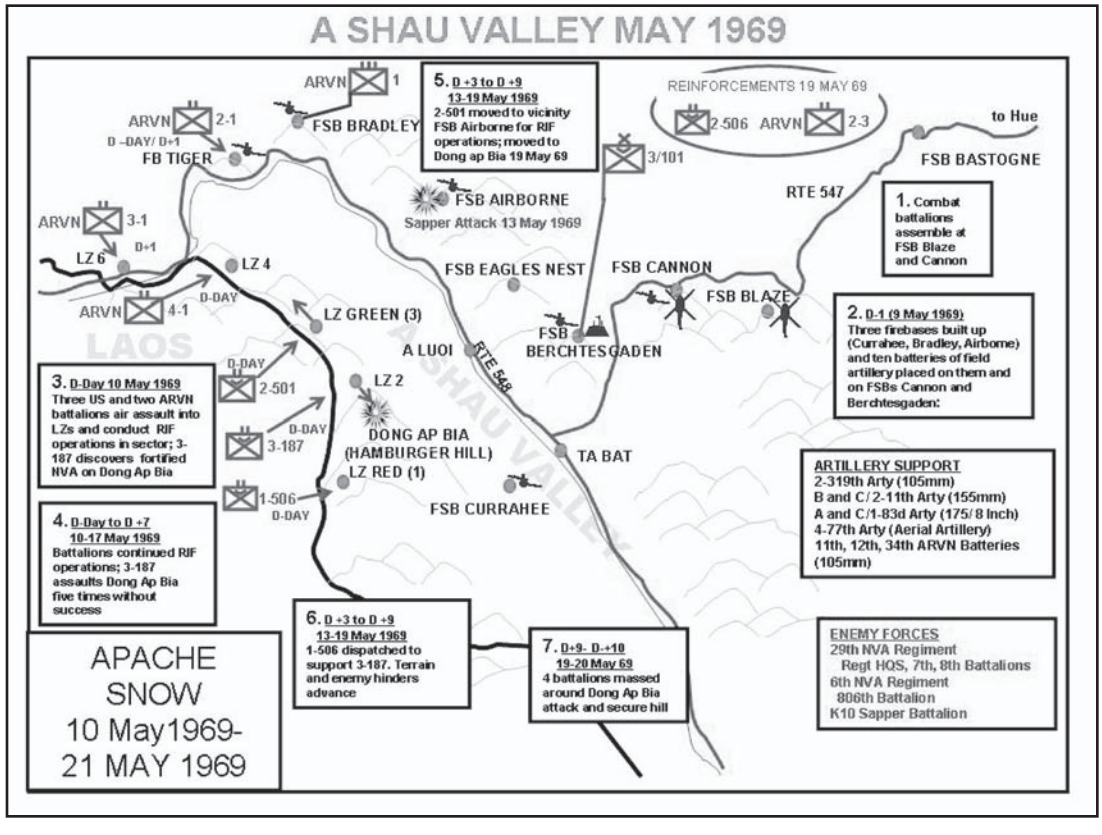

Figure 27. Operation APACHE SNOW, May 1969

A three-company advance the next day also got bogged down, with the third company, advancing to the left of the other two, getting pinned down by heavy enemy fire. A day later, on 14 May, Honeycutt again tried with three companies. Two squads of one company actually reached the summit, but with the other two stopped cold, had to withdraw. The next day the advance began again with three companies. A combination of stiff resistance from NVA soldiers in bunker complexes and a friendly-fire incident with aerial rockets stopped the attack. Honeycutt's original estimate of two companies on the hill was now raised to two battalions. The enemy also seemed to be reinforced nightly from additional forces across the border in Laos. For five days the 3-187th Infantry had attacked Dong Ap Bia without success and against stiff resistance.[28]

Elsewhere in the brigade operational area, early in the morning on D+ 3, 13 March 1969, two company-sized elements of the enemy's 806th NVA Battalion and K12 Sapper Battalion infiltrated FSB Airborne, supported by mortar and rocket propelled grenade fire. Stationed at the firebase were three field artillery batteries: C/2-11th Artillery, four 155 mm howitzers; C/2-319th Artillery, four 105mm howitzers; and a composite battery from B and C/2-319th Artillery, four 105mm howitzers. The firebase was defended by Company A, 2-501st Infantry. The defenders drove off the attack with the attacking force suffering heavy casualties, but five howitzers were damaged and 22 American soldiers were killed and another 61 wounded.[29] With enemy forces obviously in the area of FSB Airborne, the brigade commander pulled the rest of the 2-501st out of its area on the Laotian border and airlifted it to FSB Airborne to commence RIF operations near the firebase.

After the heavy repulses of the 3-187th on Dong Ap Bia, clearly a larger enemy force held the hilltop than could be ejected or destroyed by a single battalion. As early as noontime on 13 May, the brigade S3 (operations) staff alerted Lieutenant Colonel J.M. Bowers that his battalion, the 1-506th infantry, then conducting RIF operations south of Dong Ap Bia, was to plan for immediate movement overland to attack the hill from the southwest in conjunction with 3-187th's attacks from the northwest. Bower's movement commenced on 14 May for a projected two-battalion attack on the 16th.[30] At first, the 1-506th advanced with little contact, while the 3-187th paused to await its arrival. But soon Bower's advance was stopped by a large NVA bunker complex on Hill 916, a peak on the same ridgeline as Dong Ap Bia's 937-meter summit, roughly 1,500 meters to the southwest. This delayed the combined two-battalion attack until the 17th, as the 506th soldiers cleared Hill 916 and then began advancing up Hill 937 itself.[31]

The concept of the 17 May attack was for the companies of the 3-187th to hold blocking positions to the northwest of the fortified enemy position and support by fire the 1-506th's three-company, on-line advance from the southwest. Extensive artillery, rocket, and air strike preparation would precede the attack. As part of this prep, about 200 105mm artillery rounds of CS gas (tear gas) would be used to force the NVA troops out of their bunkers before the conventional high-explosive artillery barrage. Despite the preparatory fires, the attack met stiff resistance near a small knoll on the ridge, Hill 900. The intense enemy fire prevented the 1-506th from advancing farther than 300 meters.[32]

The renewed attack the next day, 18 May, used both battalions with six companies advancing. Bowers' three companies advanced slowly against heavy fire. Honeycutt's three companies advanced anyway and one company took over 50-percent casualties in short order.

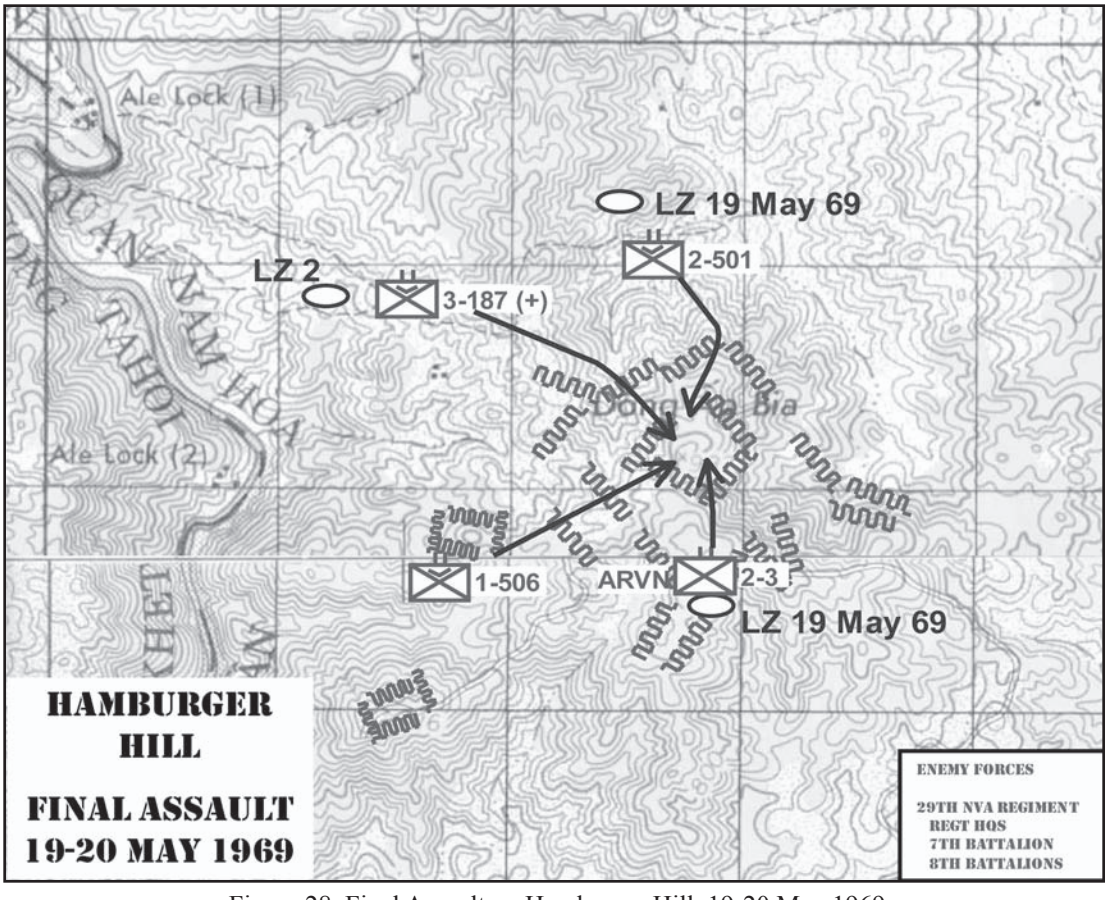

Figure 28. Final Assault on Hamburger Hill, 19-20 May 1969

Nevertheless two companies of the 187th were on the hilltop, while part of the 506th was just below the top on the opposite side. At this point, torrential rain started to pour hindering operations and forcing Honeycutt to withdraw his two unsupported companies from the top to more defensible positions.[33]

The enemy force and the terrain indicated that two reduced battalions would need reinforcement to take Dong Ap Bia. Accordingly, the division commander gave the 2d Brigade's 2d Battalion, 506th Infantry, to the 3d Brigade for use in the operation. The battalion moved to FSB Blaze and its A Company was airlifted into LZ 2 for attachment to the 3-187th on 19 May. The 1st ARVN Division supplied its 2d Battalion, 3d Infantry Regiment, which was airlifted to FSB Currahee the same day for use by the 3d Brigade. The 2-501st, which had been conducting RIF operations near FSB Airborne, in the wake of the sapper attack, was also added to the ong Ap Bia force for the 20th. Both battalions were airlifted into LZs around the hill on the 19th, the 2/3 ARVN on south and the 2-501st on the north side of what was now being referred to as "Hamburger Hill."

The combined force of four battalions was in its attack positions at nightfall on the 19th and attacked after preparatory fires from all sides on 20 May, destroying the remaining enemy forces on the hilltop and securing the position 11 days after the start of the operation.[34]

APACHE SNOW officially continued until 7 June 1969. After the conclusion of the Battle of Hamburger Hill, most enemy contacts, except for several additional sapper attacks on firebases, consisted of much smaller contacts than was had on Dong Ap Bia.[33] During the operation, the 2d Brigade showed its flexibility and, once the size of the enemy force was appreciated, its capability to mass multiple battalions against a large, well-dug in enemy force. The operation was typical of many of the airmobile brigade operations conducted in Vietnam between 1965 and 1972.

NOTES

1. Lalev I. Sepp, "The Pentomic Puzzle: The Influence of Personality and Nuclear Weapons on U.S. Army Organization 1952-1958," *Army History* 51 (Winter 2001), 8-11. The organic regiments in the 82d were the 504th and 505th Parachute Infantry Regiments and the 325th Glider Infantry Regiment. For most of 1944 and 1945, the nondivisional 507th and 508th Parachute Infantry Regiments were attached to the division. The 507th was later assigned to the 17th Airborne Division. The 101st originally had as organic the 502d Parachute and 401st and 327th Glider Infantry Regiments. The 401st was later broken up to provide third battalions for the 325th and 327th as glider regiments originally only had two battalions. The 501st and 506th Parachute Infantry Regiments were attached to the 101st for most of the war, with the 506th becoming organic in March 1945. See *Order of Battle, United States Army, World War II, European Theater of Operations: Divisions* (Paris: Office of the Theater Historian, European Theater, 1945), 283-84, 383-85.
2. Glen R. Hawkins and James Jay Carafano, *Prelude to Army XXI: US Army Division Design Initiatives and Experiments 1917-1995* (Washington, DC: US Army Center of Military History (CMH), 1997), 14.
3. Sepp, 11.
4. Ibid., 5; Jonathan M. House, *Combined Arms Warfare in the Twentieth Century* (Lawrence, KS: University Press of Kansas, 2001), 223
5. Sepp, 6.
6. *Sixty Years of Reorganizing for Combat: A Historical Trend Analysis*. Combat Studies Institute (CSI) Report No. 14 (Fort Leavenworth, KS: CSI, 1999), 23.
7. John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*. Army Lineage Series (Washington, DC: Government Printing Office (GPO), 1998), 169, 190-91; Wilson, *Armies, Corps, Divisions and Separate Brigades*, 297.
8. House, *Combined Arms Warfare,* 213.
9. Wilson, *Firepower and Maneuver*, 300-303; John J. McGrath, *History of the 187th Support Battalion*. Brochure created for the inactivation of the battalion, Brockton, Massachusetts, 1994.
10. Shelby Stanton, *Vietnam Order of Battle* (Washington, DC: US News Books, 1981), 71-72, 101.
11. Shelby Stanton, *Anatomy of a Division: The First Cav in Vietnam* (Novato, CA: Presidio, 1987), 195-201. Despite its organization, original employment plans for the division in Vietnam was to split it up by brigade and send it to different parts of the country. To retain a limited airmobile capability in each brigade, the aviation group would have had to provide a slice to each brigade. See Stanton, *Anatomy of a Division*, 39.
12. Wilson, *Firepower and Maneuver*, 356.
13. Stanton, *Vietnam Order of Battle*, 75-77, 81-82. The battalions were transferred back to their original divisions after the war, as these divisions were considered their "traditional" assignment.
14. Ibid., 79-80.
15. Wilson, *Maneuver and Firepower*, 325.
16. Stanton, *Vietnam Order of Battle*, 77-78, 82-83, 85.
17. Duquesne A. Wolf, *The Infantry Brigade in Combat: First Brigade, 25th Infantry Division ("Tropic Lightning") in the Third Viet Cong/North Vietnamese Army Offensive, August 1968* (Manhattan, KS: Sunflower University Press, 1984), 3.
18. Romie L. Brownlee and William J. Mullen III, *Changing an Army: An Oral History of General William E. DePuy, USA Retired* (Washington, DC: CMH, 1985), 163.
19. George L. MacGarrigle, *Taking The Offensive: October 1966 to October 1967*. The United States Army in Vietnam (Washington, DC: CMH, 1998), 115-17.
20. Major General William B. Fulton, *Riverine Operations 1966-1969*. Vietnam Studies (Washington, DC: Department of the Army, 1985), 31-33; Stanton, *Vietnam Order of Battle*, 77-78.
21. Fulton, 190-93.
22. As a major, Colin Powell served as an advisor to the ARVN forces which evacuated the A Shau Valley in 1966.
23. 22d Military History Detachment, *Narrative Operation "Apache Snow" 101st Airborne Division*, 1969, 8 (hereafter referred to as *Apache Snow*).
24. 101st Airborne Division (Airmobile), *Operational Report—Lessons Learned, 101st Airborne Division (Airmobile) for Period 31 July 1969, RCS CSFOR-65 (R1) (U)*, dated 9 December 1969, 4 (hereafter referred to as *101st ORLL*).

25. *3d Brigade, 101st Airborne Division (Airmobile),Combat Operations After Action Report—Summary APACHE SNOW*, dated 25 June 1969, (hereafter referred to as *3d Bde AAR*), Enclosure 2, Intelligence, 2.
26. *3d Bde AAR*, 2, and Enclosure 4, Logistical Support.
27. *Apache Snow*, 2.
28. Ibid., 4-12; 3d Battalion, 187th Airborne Infantry, *Combat Operations After Action Report, Operation Apache Snow*, dated 20 June 1969, 30, 32-33 (hereafter referred to as *3-187th AAR*).
29. *101st ORLL*, 8-9.
30. 1st Battalion, 506th Airborne Infantry, *Combat Operations After Action Report, Operation Apache Snow*, dated 18 June 1969, 6 (hereafter referred to as*1-506th AAR*).
31. *Apache Snow*, 12-15.
32. *1-506th AAR*, 9; *Apache Snow*, 16; *3-187th AAR*, 36.
33. *Apache Snow*, 18.
34. *Apache Snow,* 19-20.
35. 3d Brigade commander, Colonel Joseph Conmy, considered one of the sapper attacks, which was aimed at the brigade headquarters at FSB Berchtesgaden on 13-14 June 1969 to be an attempt to personally kill him in revenge for Hamburger Hill. See Joseph B. Conmy, Jr., "Crouching Beast Cornered," *Vietnam* (December 1990), 36.

Table 6. Reserve Component Roundout Brigades, 1973-1996

Unit	Location/ Component	Roundout to	Years
27th Infantry Brigade	NY ARNG	10th Mountain Division (Light Infantry)	1986-92
29th Infantry Brigade	HI ARNG/USAR	25th Infantry Division	1973-85
41st Infantry Brigade	OR ARNG	7th Infantry Division	1977-84
48th Infantry Brigade (Mech)	GA ARNG	24th Infantry Division (Mech)	1975-92
81st Infantry Brigade (Mech)	WA ARNG	9th Infantry Division	1988-91
116th Cavalry Brigade	ID ARNG	4th Infantry Division	1989-96
155th Armored Brigade	MS ARNG	1st Cavalry Division	1984-91
205th Infantry Brigade	MN/IA USAR	6th Infantry Division (Light)	1985-94
218th Infantry Brigade (Mech)	SC ARNG	1st Infantry Division (Mech)	1991-96
256th Infantry Brigade (Mech)	LA ARNG	5th Infantry Division (Mech)	1975-92
		2d Armored Division	1992-93

Roundout Brigades

After the withdrawal of the major US Army units from Vietnam in 1972, the Army shifted its attention back to the Cold War and the European battlefield. While the ROAD brigade had vindicated its adoption, its design as a tailored task organized maneuver command often seemed endangered. Many Army initiatives, in both force development and unit stationing ,seemed to solidify the brigade as a specific combat command containing certain units. These initiatives, most prompted by the smaller size of the All-Volunteer Army, adopted in 1973, included the creation of divisions with brigades of different capabilities, the stationing of divisional brigades overseas away from their parent unit, and the use of separate reserve component brigades to "round-out" active divisions staffed to only two-thirds strength by providing a third brigade with its slice of support and combat elements.

The latter organizational concept, officially known as the Reserve Component Roundout Brigade Program, commenced in 1973 when the Hawaii Army National Guard's 29th Infantry Brigade rounded out the 25th Infantry Division, which had never reestablished its 3d Brigade upon return from Vietnam. The program had a precedent during the Vietnam War when several ARNG separate brigades were mobilized to augment active Army divisions in the strategic reserve.[1] The roundout concept lasted, in one form or other, until 1996, when the ARNG enhanced brigade concept supplanted it. At its height from 1986 to 1991, Reserve Component brigades rounded out five Army divisions. The roundout program ebbed and flowed with other Army force structure issues.

When the program began in 1973, the Army was a 13-division force and the 25th Division was left at two brigades because of environmental concerns at Schofield Barracks, Oahu,

Hawaii. In 1974 the Army added two mechanized divisions, the 5th and 24th, and an infantry division, the 7th. Each were eventually organized with only two brigades, being rounded out with Army National Guard separate brigades.[2] This force structure remained basically intact until the mid-1980s, when the 7th and 25th Divisions were reorganized as new style light infantry divisions, each gaining an active third brigade in the process. At the same time, the Army organized two new light infantry divisions, the 6th in Alaska and the 10th Mountain Division, split between Fort Drum and Fort Benning (the brigade at Fort Benning later relocated to Fort Drum). The new divisions were organized by design with only two brigades. One of the three USAR separate infantry brigades, the 205th from Fort Snelling, Minnesota, rounded out the 6th. The Army removed the 27th Brigade, a component of the New York Army National Guard's 42d Infantry Division, from its parent division and reorganized it as a separate light infantry brigade to round out the 10th Mountain Division.[3]

The roundout concept was extended even to units expected to deploy early as contingency forces under the Rapid Deployment Joint Task Force (RDJTF), created in 1980 and redesignated as the US Central Command (CENTCOM) in 1983. The RDJTF's early deploying heavy division, the 24th Infantry Division (Mechanized), remained at two brigades, being rounded out by the Georgia Army National Guard's 48th Infantry Brigade (Mechanized). In 1990, the roundout concept was tested when Army forces were quickly deployed to Saudi Arabia to forestall an Iraqi attack after the invasion of Kuwait. The 24th, followed by the 1st Cavalry Division, deployed without their roundout brigades, using instead the separate 197th Infantry Brigade (Mechanized) and a brigade from the 2d Armored Division, respectively.[4] The reasons for not using the ARNG brigades were complicated and still controversial years later, but the

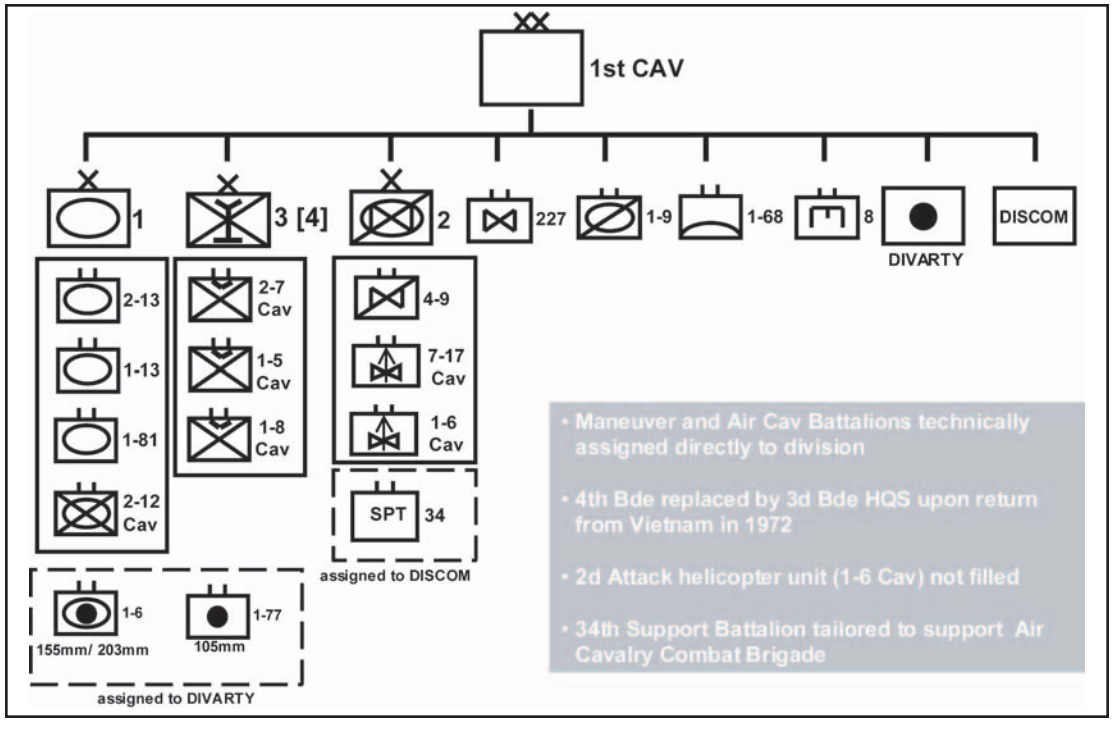

Figure 29. The TRICAP Division, 1971-1974

net effect was to discredit the roundout program. After 1991, units expected to deploy early in contingencies were removed from the roundout program. In 1996 the Army replaced the program completely with the ARNG Enhanced Brigade Program, which will be discussed later in this work. Table 6 lists the roundout brigades, as they existed throughout the duration of the program.[5]

The TRICAP Division and the Air Cavalry Combat Brigade

Even before the end of the Vietnam War, the Army was experimenting with the ROAD force structure, proposing a division where the three maneuver brigades each had a different structure or function. This division, the TRICAP division, for triple capability, essentially would consist of an armored brigade, an airmobile brigade, and a new type of unit which had been experimented with in Vietnam, an air cavalry combat brigade (ACCB). The plan was on the drawing board in 1970 for the 1st Armored Division. But when the 1st Cavalry Division returned from Vietnam to Fort Hood, Texas, in 1971 with two brigades, one remaining in Vietnam until 1972, it fell in on the personnel and equipment and mission of the 1st Armored Division, which had, in turn, fallen in on the personnel and equipment of the 4th Armored Division in Germany, which was inactivated in turn.[6]

The resulting experimental division design included a brigade of three tank and one mechanized infantry battalions, supported by a battalion of self-propelled field artillery; a brigade of three airmobile infantry battalions supported by a divisional aviation battalion and a towed field artillery battalion; an air cavalry combat brigade, consisting of an air cavalry squadron like the one fielded by the airmobile 1st Cavalry and 101st Airborne Divisions in Vietnam; and one, two on paper, new attack helicopter battalion, equipped with Cobra attack helicopters.[7]

Even though technically all the maneuver and aviation battalions belonged to the division directly, the three brigade headquarters, with three distinct organizational structures and missions, actually controlled the battalions, with division support elements equally organized to specifically support specific brigades. For example, the division support command (DISCOM) organized a special support battalion tailored for supporting the ACCB. The TRICAP experiment lasted until 1974, when Army planners, concerned with a new emphasis on armored combat in Europe, converted the division into a standard armored division and made the ACCB into the separate 6th Cavalry Brigade (Air Combat).[8] It's organization is depicted in Figure 30.

Forward Deployed and Rotating Brigades in Europe

While the Army was involved in Vietnam, the Soviet Union had been building up its forces in Central Europe, and in 1968, used military force to put down a reform movement in Czechoslovakia. Accordingly, the Army turned its focus back to Europe in the early 1970s. As part of this focus, the brigade again was tailored as a separate force, despite division affiliations.

The 24th Infantry Division (Mechanized) had returned from Germany in 1968, leaving its 3d Brigade behind. In 1970, the 1st Infantry Division returned from Vietnam and replaced the 24th Division at Fort Riley and in Germany. The original concept for the brigade remaining in Germany was that the rest of the division would return to Germany for periodic training exercises, called the Return of Forces to Germany (REFORGER), and swap brigades. While

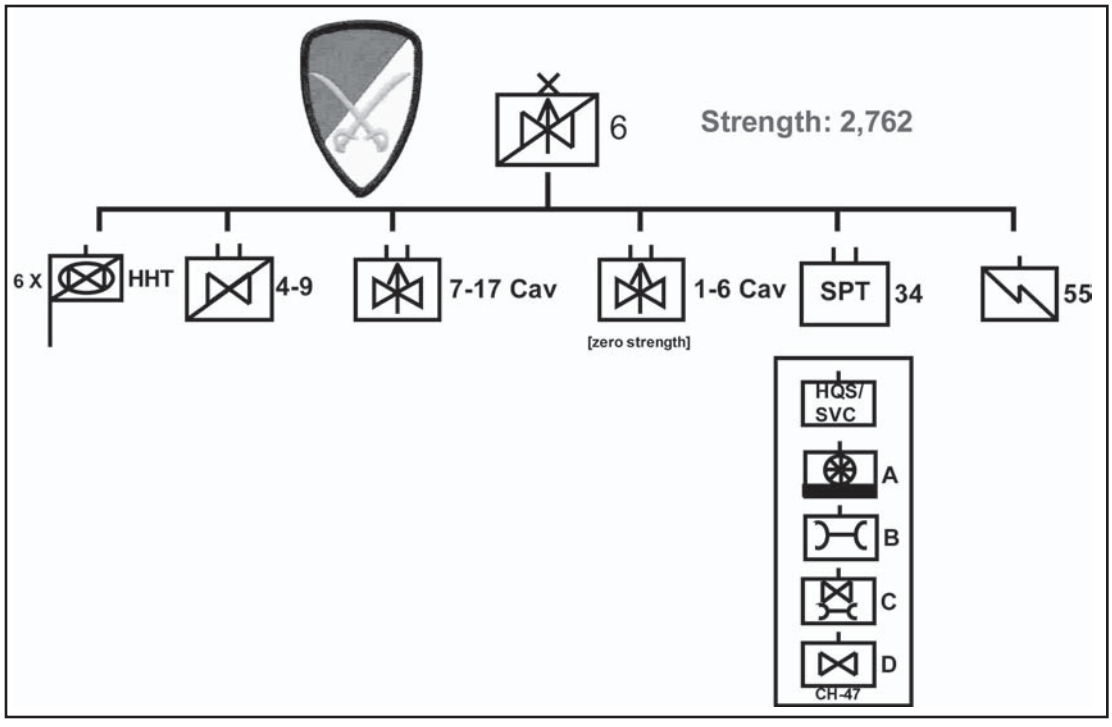

Figure 30. Air Cavalry Combat Brigade

the swap never took place, except for the change in unit designation from 24th to 1st, the brigade was upgraded with support elements and a brigadier general commander and redesignated as the 1st Infantry Division (Forward) in 1975.[9]

The idea of brigade swaps was revived several years later. Congress passed the Nunn Amendment in 1974, which called for an increase of combat troops in Europe at the expense of support troops. The Army sought to meet the conditions of the amendment by placing two brigades in Europe on continuous six-month rotations. The headquarters and support elements would be permanently assigned to Germany, but the combat troops would rotate over six-month periods, not bringing dependents or requiring on or off-post quarters. The brigades would be stationed at the Army training areas of Grafenwöhr, Wildflecken, and Hohenfels, Germany, as well as at the former Air Force base in Wiesbaden. The two brigades chosen were the 3d Brigade, 2d Armored Division, from Fort Hood, designated Brigade 75, and a newly raised 4th Brigade, 4th Infantry Division (Mechanized), from Fort Carson, as Brigade 76. Each division raised an additional brigade to replace the rotating one, the 2d Armored Division raising its 4th Brigade. Some units for the rotating brigades came from the 1st Cavalry Division and 1st Infantry Division (Mechanized). Brigade 75 moved to Germany between March and June 1975. Brigade 76 followed a year later. Army studies quickly decided that the rotation of combat battalions did not enhance readiness and both brigades were designated for permanent assignment to Germany. The 4th Brigade, 4th Infantry Division (Mechanized), was permanently assigned to Wiesbaden Air Base in the fall 1976. Though considered a V Corps asset, the brigade was operationally attached to the 8th Infantry Division (Mechanized), while that division's 2d Brigade, located at Baumholder, the farthest major unit from the East

German border and on the wrong side of the Rhine, was detached operationally as the V Corps operational reserve. The 3d Brigade, 2d Armored Division, did not become a permanent European brigade for two more years. In 1978, the brigade moved into a new kaserne built for it in northern Germany at Garlstedt near the port of Bremerhaven, becoming the only US Army unit in northern Germany. As with the 1st Infantry Division's forward brigade, this brigade received a brigadier general commander, a support slice, and was called the 2d Armored Division (Forward). The 2d Armored Division then inactivated its now extra 4th Brigade. The 4th Division retained its extra brigade, as, operationally, its 4th Brigade was no longer part of the division.[10]

1970s and 1980s Brigade Redesign Initiatives

The original Army concept after Vietnam was for a 13-division active force. As part of this force, the Army retained separate brigades for special missions or as theater defense forces, and in the reserve components. Brigades were stationed in Alaska, Panama, Berlin, and to support the Infantry and Armor Schools. The Army National Guard and Army Reserve still maintained a large number of separate armor and infantry brigades. The use of separate brigades made up of troops from one state often simplified the force structure in the state-specific Army National Guard. In the mid-1970s, the Army increased its force structure gradually by three divisions, each with only two brigades and a roundout brigade, but no new separate brigades were added to the force.[11]

In the decade between 1976 and 1988, the Army conducted major consecutive or simultaneous studies of organizational structure (listed in Table 7). For the maneuver brigade, the culminative effect of these studies was the adoption of modified brigade organizations, the creation of divisional aviation brigades, and a revision of the divisional brigade service support organization. The new organization retained the ROAD concept of brigades as unfixed task forces.

Table 7. Army Organizational Redesign Initiatives, 1975-1988

Program	Dates	Scope	Test Unit/Remarks
Division Restructuring Study (DRS)	1975-1979	armored and mechanized infantry divisions	2d Brigade, 1st Cavalry Division; proposed fixed brigade and divisional air cavalry attack brigade
Division 86	1978-1980	armored and mechanized infantry divisions	expanded on DRS; unfixed brigade; Division 86 Restructuring Study 1982; began implementation 1983
Army 86	1980-1983	light divisions and larger units and their elements	expansion of Division 86 to rest of the Army
High Technology Test Bed (HTTB)/High Technology Light Division (HTLD)/High Technology Motorized Division (HTMD)	1980-1988	new light division/new motorized division	9th Infantry Division; expansion of Army 86 to test light infantry division organizations
Army of Excellence (AOE)	1983-1986	Whole Army; specifically tested new light infantry division concept	7th Infantry Division (Light); revision and expansion of Army 86; 1983 was the Army's "Year of Excellence." Implemented 1983-1986

General William DePuy, the first commander of the Army's new Training and Doctrine Command (TRADOC), which was established in 1973, commenced many organizational and doctrinal initiatives during his tenure (1973-1977). DePuy's focus was based on a combination of the Soviet buildup in Europe, the Army's placing of Europe on the back burner during the Vietnam War, the impact of modern weapons demonstrated in the 1973 Arab-Israeli War, and the projected introduction of new weapons systems and equipment into the Army in the early 1980s. This new equipment included a utility/transport helicopter (UH-60 Blackhawk), a tank (M1 Abrams), an infantry/cavalry fighting vehicle (M2/M3 Bradley), and an attack helicopter (AH-64 Apache). In May 1976 DePuy initiated a study of the divisional and brigade operational structure, again using the 1st Cavalry Division as the test unit. The study, known as the Division Restructuring Study (DRS), proposed a divisional organization which included a fixed brigade structure for the armored and mechanized infantry divisions. Each brigade would consist of three tank battalions and two mechanized infantry battalions. Only the 2d Brigade, 1st Cavalry Division, implemented the structure in a test mode and the fixed brigade, as it was called, was ultimately nixed by DePuy's successor, General Donn Starry and the then Army Chief of Staff, General Edward Meyer, in 1979.[12]

Meyer and Starry transformed DePuy's DRS study into a more wide-ranging one, called Division 86, which eventually was expanded into the Army 86 and, under Meyer's successor, General John Wickham, the Army of Excellence (AOE) programs. The revised Army organizational schemes were adopted both as the new equipment was fielded and as a matter of course. Army armored and mechanized units began implementing the Division 86 structure in 1983, with AOE changes. In 1986, the armored and mechanized divisions completed the AOE conversion by forming the divisional aviation brigades.

The new organization, while changing the structure of the maneuver battalions, basically retained the nonfixed brigade standard of the ROAD configuration. The tank and mechanized battalions were standardized in structure, with a fourth line company added to each and supporting elements, such as mortars and scouts, moved to the battalion headquarters company from the now deleted combat support company. Doctrinally, the old ROAD standard of cross attaching platoons to make combined arms company teams, was discouraged, with the lowest level for such actions now to be the battalion.[13] Forward support battalions, which consisted of a slice of division service support elements to support each brigade, also came into being.

When Meyer expanded Division 86 to include other types of units, he set up the High Technology Test Bed (HTTB) in 1980 at Fort Lewis. Using the 9th Infantry Division, the HTTB tested organizational structure and equipment to try to produce a lighter version of the armored or mechanized division which could be deployed easily by aircraft, while maintaining more firepower than the standard infantry division. Meyer's successor, Wickham, branched the project off into two directions in 1983: a lighter infantry division and a motorized infantry division equipped with enhanced technology to give it deployablity and firepower. The 9th Division continued with the motorized mission and the 7th Infantry Division, at Fort Ord, California, assumed the light infantry test mission.

At Fort Lewis, the 9th Infantry Division continued to develop a motorized divisional structure, using available wheeled equipment to stand in for projected technological developments. The organizational structure was tweaked and changed numerous times

until a final structure was adopted in 1988, which included two motorized brigades and a roundout mechanized infantry brigade from the Washington state Army National Guard and an air cavalry attack brigade. As subordinate units to the two motorized brigades, the division developed three new types of combat battalions: a light combined arms battalion CAB (L), a heavy combined arms battalion CAB (L), and a light attack battalion (LAB). The types are listed in Table 8.[14]

Table 8. Combined Arms Battalions in the Motorized Division, 1988

Type	Designation	Composition	Projected Equipment	Actual Equipment
Light Combined Arms Battalion	Infantry	2 Assault Gun Cos 1 Light Motorized Infantry Co 1 CSC		TOW-HMMWVs; M551 Sheridans (briefly) Motorized infantry squads ride in M998 HMMWV/Mk 19 Grenade Machine Guns (GMGs)
Heavy Combined Arms Battalion	Infantry	1 Assault Gun Co 2 Light Motorized Infantry Cos 1 CSC	Assault Gun System	TOW-HMMWVs; M551 Sheridans (briefly) Motorized infantry squads ride in M998 HMMWV/Mk 19 GMGs
Light Attack Battalion	Armored/Cavalry	3 Light Attack Cos 1 CSC	83 Fast Attack Vehicles (FAV); dune buggies equipped with TOWs or .50 cal machineguns (MGs)	One battalion equipped as a standard M60A3 tank battalion; other equipped with M966 HMMWV/TOW 2 and M1025 HMMWV/Mk 19 40mm GMGs
Combat Support Company (CSC)	Organic to each of above battalion types	1 Scout Plt 1 AT Plt 1 107mm Mortar Plt	AT Plt: Ground-launched Hellfire missile system mounted on HMMWVs	AT Plt: M966 HMMWV/TOW 2

The motorized division was predicated on the fielding of new equipment. In the interim, it was equipped, except in the case of the LAB, with substitute items. The projection was for the LAB to be equipped with three companies of fast attack vehicles (FAV), dune buggies armed with TOW missile systems or .50 caliber machine guns. Replacing the dune buggies, which were still in the developmental stage, were armored high-mobility multipurpose wheeled vehicles (HMMWV) equipped with TOW missiles and the new Mark 19 40mm grenade machine gun (GMG). The combined arms battalions were organized as a mix of assault gun companies and motorized infantry companies. The heavy CAB had two assault gun companies and one motorized infantry company, while the ratio was reversed in the light CAB. The assault gun was a proposed system (AGS) being developed as a lightly armored tracked vehicle armed with a low-velocity 105mm gun. In place of the AGS, the M551 Sheridan light tank was initially used, later replaced with the ubiquitous TOW or Mk 109 GMG HMMWV. Each CAB and the LAB also had an organic combat support company containing, along with mortars and scouts, an antiarmor platoon slated to be equipped by 1989 with HMMWVs mounting a specially designed ground version of the Hellfire missile. In lieu of this system, which was ultimately never fielded, the TOW was again used. The motorized infantry companies rode in specially modified M998 cargo HMMWVs, mounting GMGs.[15]

The end of the Cold War and budget considerations doomed the motorized division experiment. A standard mechanized infantry roundout brigade had already replaced the 2d Brigade in 1988. The 1st Brigade was inactivated in 1990 and the division headquarters and support elements followed in 1991, while the 3d Brigade was converted into the separate 199th Infantry Brigade. The 199th was then redesignated as the 2d Armored Cavalry Regiment in 1992.

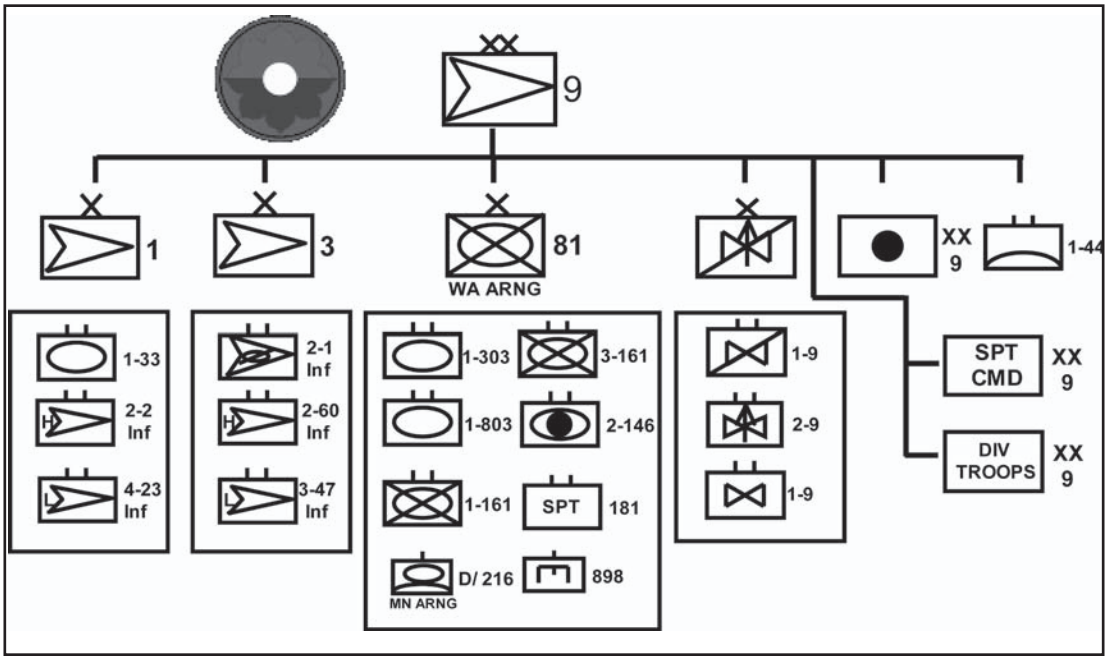

Figure 31. 9th Infantry Division (Motorized), 1988

At Fort Ord, the 7th Infantry Division developed a new, lighter infantry division structure. After some modifications and adjustments, the new light infantry division resembled the heavier Division 86 in general structure, with less heavy equipment. The nine light infantry battalions were parceled out between the standard three brigade headquarters. The division also contained a modified aviation brigade, with less attack and more utility helicopters than found in the armored or mechanized division. In addition to the 7th Infantry Division, the 25th Infantry Division also converted to the light design. Three new divisions, the 10th Mountain, the 6th Infantry, and the Army National Guard, of Virginia and Maryland's, 29th Infantry were activated, the former two with reserve component roundout brigades.[16]

In the 1980s, the Army also experimented with modifications of the unit manning system. Since the end of World War II, with a few exceptions, the Army had manned units based on individual replacements. Meyer proposed to rotate personnel as units. To execute this, in the mid 1980s, he modified the CARS unit designation system, which had been used to identify units in the combat arms since 1957. The new US Army Regimental System (USARS) applied the regimental system to the entire Army, making many of the noncombat branches into single branch regiments and attempting to make the regiments into the avenue along which the unit replacement system would run. Battalions belonging to the same regiment would rotate between Continental United States posts and overseas sites. Accordingly, the system required large-scale unit redesignations and the loss of many regimental designations made excess. An additional component of this system was the Cohesion, Operational Readiness and Training (COHORT) project, which trained a company-sized unit of combat arms soldiers from basic training and then kept them together for an overseas and Continental US tour of duty.

Both COHORT and the unit replacement system were eventually abandoned after a period of experimentation. However the redesignations remained and in divisions with nine infantry battalions and only three regimental affiliations, like the 101st and 82d Airborne, the battalions ended up grouped in the same brigade by regiment and the brigades are often referred to, informally, and confusingly, as regiments. In the 82d, the informal usage includes reversion to a mixing of World War II and Korean War era designations.

After several years of rotating units and downsizing, when the rotation program ended, many Army battalions ended up under divisions to which they did not traditionally belong. In 1995 the Army, as the final act of the 1980s flirtation with unit replacement, redesignated battalions to return these traditional designations to their long-established divisions.

However, vestiges of the regiment as a tactical unit roughly equivalent to the brigade still remained. AOE planners had sought to turn the Army's ACRs into brigades, but after resistance from the cavalry community, the ACRs were retained. The trend was taken further with the creation of several other regiments including the 75th Ranger Regiment in 1985, as a controlling and planning headquarters for the Army's three Ranger battalions. Originally a special task force, then a battalion and a group, the 160th Aviation Regiment (Special Operations) was activated in 1990 and controls various elements including four organic battalions. The regiment is equipped with specialized helicopters and trains to conduct special operations worldwide.

Table 9. Informal Regimental Designations 82d and 101st Airborne Divisions

Designation	Informal Designation	Battalions
1st Brigade, 82d Airborne Division	504th Parachute Infantry Regiment	1-504th Infantry 2-504th Infantry 3-504th Infantry
2d Brigade, 82d Airborne Division	325th Airborne Infantry Regiment	1-325th Infantry 2-325th Infantry 3-325th Infantry
3d Brigade, 82d Airborne Division	505th Parachute Infantry Regiment	1-505th Infantry 2-505th Infantry 3-505th Infantry
Division Artillery, 82d Airborne Division	319th Airborne Field Artillery Regiment	1-319th Field Artillery 2-319th Field Artillery 3-319th Field Artillery
1st Brigade, 101st Airborne Division (Air Assault)	327th Infantry Regiment	1-327th Infantry 2-327th Infantry 3-327th Infantry
2d Brigade, 101st Airborne Division (Air Assault)	502d Infantry Regiment	1-502d Infantry 2-502d Infantry 3-502d Infantry
3d Brigade, 101st Airborne Division (Air Assault)	187th Infantry Regiment	1-187th Infantry 2-187th infantry 3-187th Infantry
Division Artillery, 101st Airborne Division (Air Assault)	320th Field Artillery Regiment	1-320th Field Artillery 2-320th Field Artillery 3-320th Field Artillery

As in the case of the 82d and 101st Divisions' combat brigades, often units that are not regiments have been informally referred to as such, even in official or semiofficial correspondence. A good example of this is the 11th Aviation Group, which had served in Germany since 1993 as a group, although it had formerly been an aviation brigade. The group was often referred to in the 2003 Iraqi War as the "11th Aviation Regiment" or the "11th Attack Helicopter Regiment." However, the name was officially incorrect and the organization had no organic battalions assigned to it.[17] Some Army brigades have official special designations or nicknames, the most famous being the 1st Brigade, 2d Armored Division, which in the 1991 Gulf War was much more widely known as the Tiger Brigade. These designations are found in the brigade listing located in Appendix 4.

Aviation Brigades

One of the novel concepts of Division 86 and its follow on, the AOE, was the inclusion of an aviation brigade in the divisional structure. The amount and placement of aviation in the division structure had gone up and down since the adoption of ROAD in 1963. ROAD initially included an aviation battalion in each division, a unit basically responsible for providing command and control helicopters, and limited troop and supply transportation. The battalion was reduced to a company in the ROAD armored and mechanized divisions, and then had been removed entirely during Vietnam, only to return in 1970.[18] In Vietnam itself, each deployed division retained the organic aviation battalion, some even receiving additional companies or battalions for extended periods.[19]

An aviation brigade was used in Vietnam, but in a far different way from the projected use of the new aviation brigades. The 1st Aviation Brigade, which stood up in 1966, essentially controlled administratively all aviation assets not assigned to divisions and at one time or another had seven aviation group headquarters, 20 aviation battalions, and four air cavalry squadrons under its control. For operations, the aviation groups with attached battalions, were assigned or attached to divisions or higher headquarters. The 1st Aviation Brigade's legacy would be found in the corps and theater aviation brigades deployed in the 1980s and 1990s. These brigades provided aviation assets to subordinate units, while not usually being used as operational headquarters.[20]

Originally the divisional aviation brigade was called the air cavalry combat brigade. As mentioned previously in this work, the ACCB was a concept experimented with in the TRICAP division, resulting in the creation of the separate 6th Cavalry Brigade (Air Combat) in 1975.[21] The new brigade was initially the simple addition of the ACCB to the division structure, with other divisional aviation assets added. The divisional ACCB included the divisional cavalry squadron, which was reorganized to include air cavalry elements; an attack helicopter battalion or two; and the former divisional aviation battalion, which was originally designated as a general support aviation battalion and later as an assault helicopter battalion.

The brigade was an anomaly in that its structure contained aspects of an administrative and of a tactical organization. Many aviation proponents and the Army itself, considered the brigade, with its attack helicopter battalions, to be a fourth maneuver brigade in the division. The brigade also consisted of an assault helicopter battalion, used to carry troops and supplies, and the divisional cavalry squadron. The latter, with its mix of air cavalry and armored cavalry

troops, normally worked directly for the division commander, while the former generally served in a combat support role, moving troops and supplies.[22]

To reflect the notion of the brigade as a combat organization, in spite of its possession of units it only controlled administratively or in a supporting capacity, the organization has often been referred to in doctrinal literature as the divisional combat aviation brigade and in the field as the 4th Brigade. However, its actual designation is simply "Aviation Brigade, XX Division."[23]

As with all AOE organizational structures, the aviation brigade evolved from its original structure into a more robust organization. The modern brigade consists of one or two attack helicopter battalions, an assault helicopter battalion, and the divisional cavalry squadron.

After much debate over whether tanks should be included in the cavalry squadron in the heavy division (i.e., armored and mechanized), the tanks remained in the ground cavalry troops, which consisted of a mix of M1 Abrams tanks and M3 Bradley Fighting Vehicles. In the light infantry division, the ground cavalry troops used the HMMWV. Each squadron also contains two or three air cavalry troops, equipped primarily with the OH-58D Kiowa observation helicopter.

The assault helicopter battalion provided helicopters for small-scale (up to a battalion) air assault operations, aerial resupply, casualty evacuation, and command and control and special mission helicopters.

In the DISCOM was found an aviation maintenance battalion, which was essentially the support battalion for the aviation brigade. This battalion provided centralized maintenance for the division's aviation, though each aviation battalion also had limited maintenance assets of its own.

The attack helicopter battalions contained the AH-64 Apache in the heavy division and modified OH-58Ds in the light and airborne divisions. The attack units of the aviation brigade provided the basis for its consideration as a maneuver brigade. The original air assault division had the forerunner of the attack helicopter battalion in its aerial surveillance and escort battalion. The battalion was equipped with armed Mohawk planes and designed to support airmobile operations. It was scrapped from the final division design, though rocket-firing helicopters were found in a battalion that was part of the division artillery. The new attack helicopter battalions, equipped primarily with antiarmor weaponry, were designed to destroy enemy forces at decisive points throughout the depth of the battlefield.

Aviation units in the new aviation brigades suffered from a long-term identity crisis concerning unit designations in the 1970s and 1980s. There was debate in the 1970s over whether attack helicopter units should be considered attack helicopter aviation battalions or air cavalry squadrons. The air cavalry won that round, but in 1983 the Army made aviation a separate branch and attack helicopter aviation battalions were organic components of the new aviation brigades, though air cavalry attack battalions still existed as well in some nondivisional units.

Adding to the confusion, aviation units were formerly labeled with separate battalion designations, but in the late 1980s the branch adopted a regimental system, causing the renaming of all aviation units, including the maintenance battalion in the DISCOM. Since

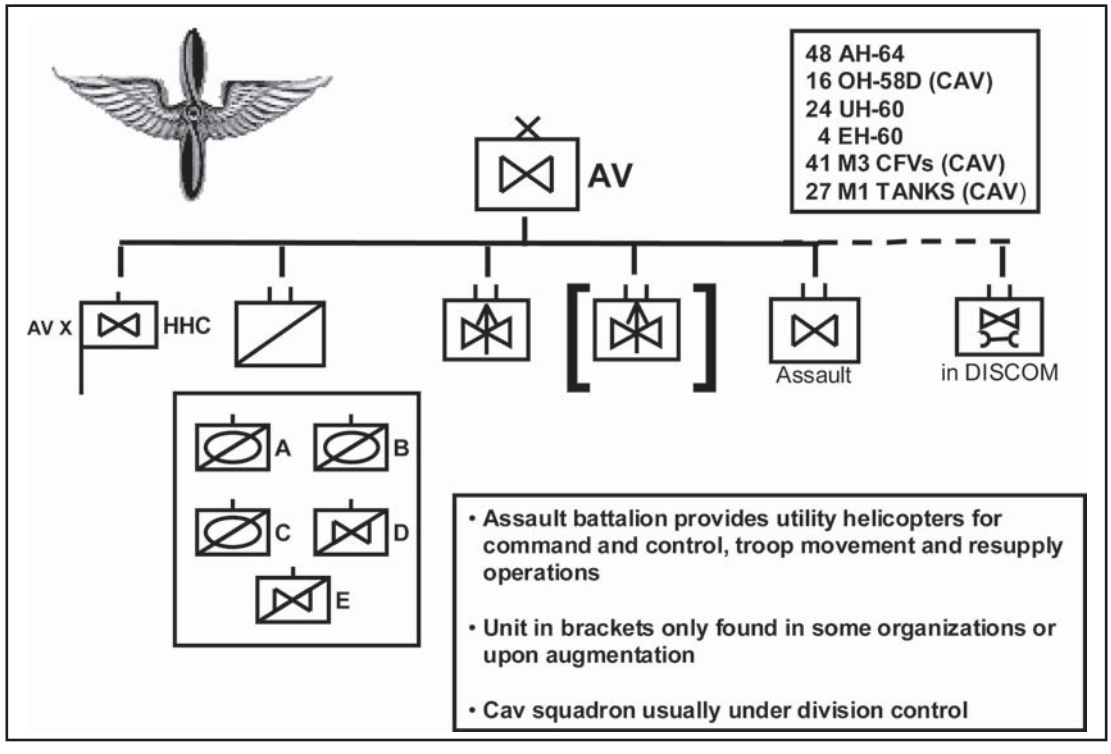

Figure 32. Armored/Mechanized Division Aviation Brigade, 2003

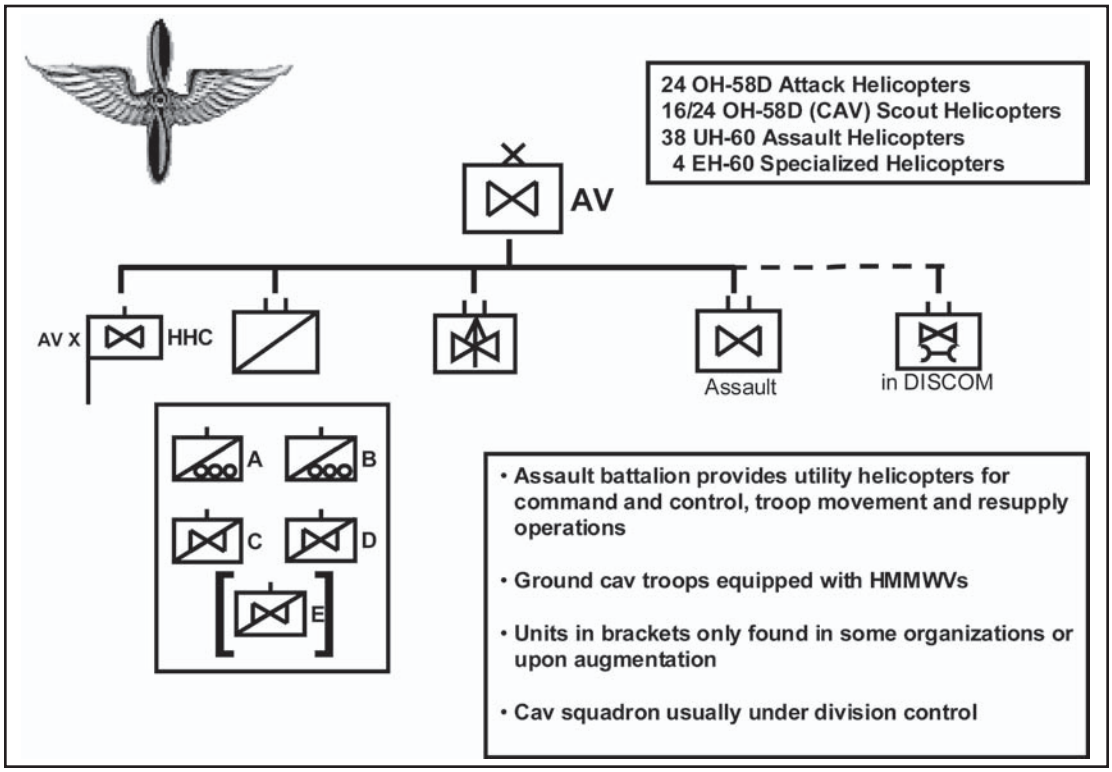

Figure 33. Light Division Aviation Brigade, 2003

aviation did not possess a history of regimental organization, most divisional battalions became elements of a regiment created from the former division aviation battalion.

At one point during the TRICAP experiment, an air cavalry combat brigade was designed to consist of one airmobile infantry battalion and two attack helicopter squadrons, without any support elements. This plan, which would have provided a truly combined arms aviation brigade, was scrapped and when the aviation brigade eventually joined the division, ostensively as a maneuver brigade, it was as an entirely aviation entity, including combat support aviation elements used to support the division as a whole.[24]

The Air Assault Division

The Army left Vietnam with two airmobile divisions. As we have seen, the 1st Cavalry Division was promptly converted into the TRICAP division, and then later into a standard armored division. The other airmobile division was the 101st Airborne, which had been converted from airborne to airmobile division status while in Vietnam in 1968. The 101st returned to Fort Campbell, Kentucky, in 1972. Awaiting it there was the 173d Airborne Brigade, which the Army had retained after Vietnam as a quick deploying contingency brigade. Later in 1972, the 173d merged with the 101st, which had to be rebuilt after its Vietnam service as part of the new all-volunteer Army. The 173d was resdesignated as the division's 3d Brigade, paratrooper qualified, a revived status that had been dropped from the airmobile division in Vietnam. In 1974, the Army again dropped the paratrooper status. However, the 101st commander, Major General Sidney Berry, capitalized on the division's unique organization, getting the division redesignated as an air assault division and receiving authorization to award its members the newly created air assault badge.[25]

With the adoption of the AOE program, the air assault division was modified. To standardize the division's unique aviation group with the terminology used by the other divisions, the group was upgraded to become the 101st Aviation Brigade. The new AOE brigade contained the divisional air cavalry squadron, a general support, or command, aviation battalion; two combat assault aviation battalions, one medium, one light; and four attack helicopter battalions.[26] The structure was, however, again modified, even as it was being implemented. The 101st retained the second light assault battalion the division already had under the earlier tables of organization and never activated the fourth attack helicopter battalion, while, in turn inactivating the third battalion.[27]

Robust modifications to the air assault division, initially done ad hoc and later officially sanctioned, provided the 101st with eight aviation battalions in its aviation brigade at the start of the 1991 Gulf War. With an additional attached attack battalion added to the division after the war, this provided a unique aviation force of three attack battalions, three assault battalions, a medium assault battalion, and the divisional cavalry squadron and a battalion, which provided command and control and special operations helicopters. This organization permitted the forming of air assault brigade combat teams, each consisting of three infantry battalions, a field artillery battalion, an assault aviation battalion, and an attack aviation battalion. When so organized, the divisional brigades could conduct separate air assault operations. When not so organized, the attack battalions provided a separate strike force available to the division commander. The division was truly an air assault organization in that each brigade could conduct such operations simultaneously, unlike the Vietnam era airmobile divisions.

However, placing nine battalions under one brigade headquarters was difficult, both administratively and for command and control purposes. Accordingly, in 1997, a reorganization divided the aviation assets of the Aviation Brigade, 101st Airborne Division (Air Assault), into two brigades: the 101st Aviation Brigade and the 159th Aviation Brigade. The attack assets, along with the command battalion and air cavalry squadron, were under the control of the 101st Brigade. The one Chinook medium and three Blackhawk assault battalions were placed under the 159th Brigade.[28] The revived number 159 was one of the original brigades of the 101st Division under the square division. Number 101, used as the divisional aviation brigade, was the organizational descendent of the ROAD-era 101st Aviation Group.

Two systems developed in the late 1970s and early 1980s drove the force structure of the air assault division: the UH-60 Blackhawk transport helicopter and the AH-64 Apache attack helicopter. The Blackhawk was issued to the division starting in 1979. The AH-64 replaced older AH-1 Cobras as the division embraced the attack helicopter concept in the early 1980s. Additionally, the 101st contained the only divisional battalion equipped with the CH-47 Chinook. The Chinook, technically a medium cargo helicopter, was capable of heavy duty carrying troops, supplies, equipment, and even sling-loading towed howitzers. The helicopter, around since Vietnam, was refitted in the 1980s and 1990s, allowing it to keep up with the times in military technology.

In the 1990s, for the first time, air assault infantry battalions were deployed outside the 101st Airborne Division, with two battalions in the 2d Infantry Division in Korea and an additional battalion in the Alaska-based 172d Infantry Brigade. The 2d Division, therefore, had the capability to organize one of its brigades as a small air assault brigade.

Combat Service Support and the Brigade[29]

Since the adoption of ROAD in 1963, with its task organized brigade structure and consolidated logistical units in the DISCOM, brigade commanders depended on a slice of support from the division's assets. This support typically included a supply and truck company from the division supply and transportation battalion, which provided fuel, rations, ammunition, and trucks; a medical company from the medical battalion of the division, to provide a medical clearing station complete with ambulances; and a maintenance company from the divisional maintenance battalion, to provide direct support maintenance and repair parts supply.

The separate brigade, though originally configured with no service support elements, was quickly given an organic support battalion containing all of the above elements and an administration company to augment the brigade headquarters with support normally provided by the divisional adjutant general section.

In Vietnam, brigade combat service support usually consisted of a large base camp that contained the brigade rear elements including the field train elements of the combat battalions (unit supply and maintenance) and the brigade's slice of the division support command assets. This slice, the FSSE, usually consisted of a company from the medical battalion, a company from the maintenance battalion and platoon- or company-sized elements from the division's supply and services or supply and transportation company. Sometimes the FSSE echeloned

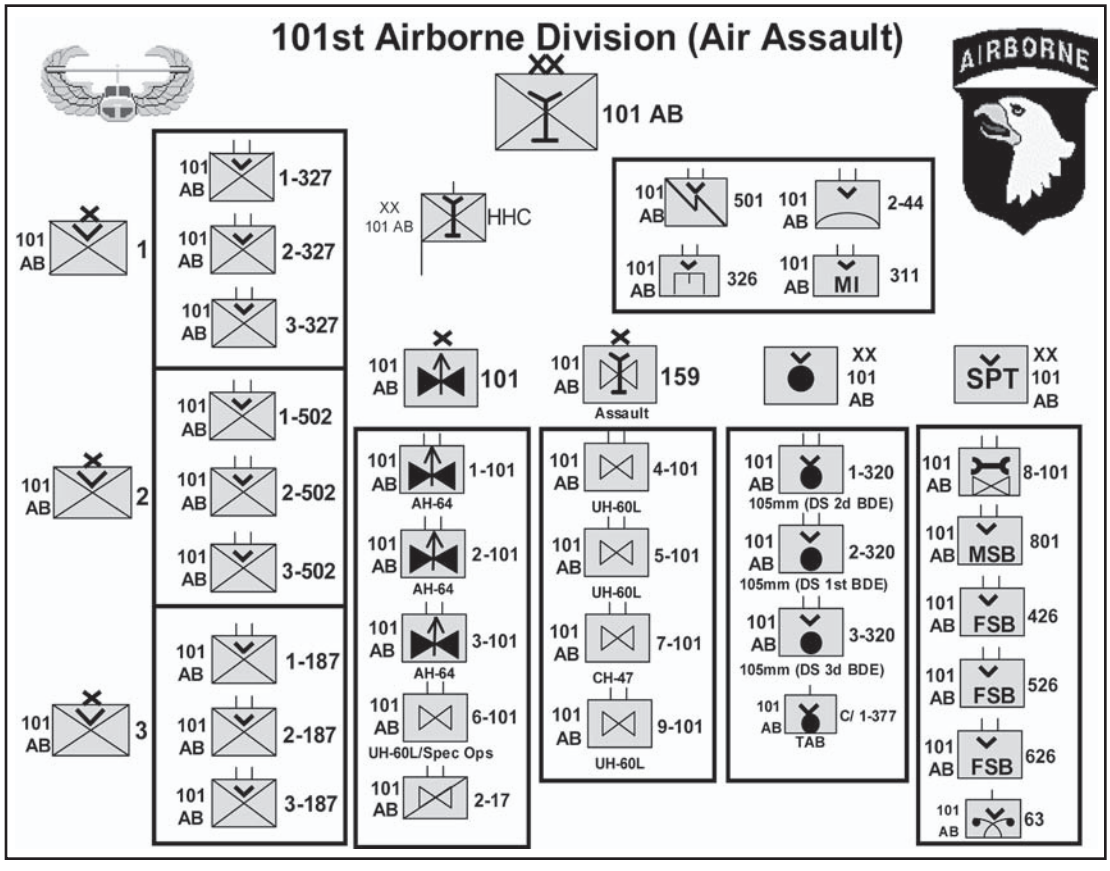

Figure 34. Air Assault Division Structure, 2003

itself with a forward element located at a forward support base, usually collocated with the brigade command post.[30]

After Vietnam, the armored and mechanized divisions developed a logistical support concept similar to the FSSE. This was the Forward Area Support Team (FAST), which provided similar slices of the DISCOM, as were found in the FSSE, to support the divisional brigades logistically. The FAST Team was headed by a Forward Area Support Coordinator (FASCO), who was usually the executive officer of one of the DISCOM's functional battalions. By the early 1980s, the FASCO was permanently detailed to that job.[31]

Almost from its inception, the separate ROAD brigade had its own logistical element, a multifunctional support battalion. This battalion provided most of the same type of support found in the FAST Team. However, the organization was permanent and under its own commander. The separate brigade support battalion also included an administrative company, which was later made a separate element. In the transformation from ROAD to AOE structures, the separate brigade's logistical structure remained basically as under ROAD, with the additional of a Brigade Materiel Management Center (BMMC) in the support battalion's headquarters company. The BMMC matched a similar organization added to the divisional DISCOM in the 1970s to provided automated management of logistics.

Division 86 and AOE transformed brigade logistics from depending on ad hoc task forces from the DISCOM's functional battalions to permanent, tailored multifunctional FSB. The new FSBs were organized with a headquarters company, supply company, maintenance company, and medical company. The FSB commander also commanded the brigade rear area or brigade support area (BSA) and had an organic support operations section to plan and execute the logistics mission for the brigade. The emphasis was now on forward support, typified by the placing of an ammunition transfer point (ATP) at the brigade level. The ATP was essentially the brigade's own mini-ammo dump. AOE organization also provided a tailored support battalion for the aviation brigade.[32]

With the AOE adjustments, brigade logistics were organized in the late 20th and early 21st centuries as follows: each unit echeloned its logistics assets to provide for their survivability and responsiveness.

At the lowest level, the company, the company first sergeant, or sometimes the executive officer, oversaw the company trains, which generally consisted of only the logistic elements the company would most need, but would not survive well in the frontline. This typically was a recovery vehicle with several mechanics, the company armorer, and medics from the battalion headquarters company with an ambulance. The company trains normally located themselves one terrain feature behind the company, less than a kilometer from the frontline.

The next level was the battalion or task force's combat trains. The battalion executive officer located the combat trains in the battalion sector, within 5 kilometers of the frontline

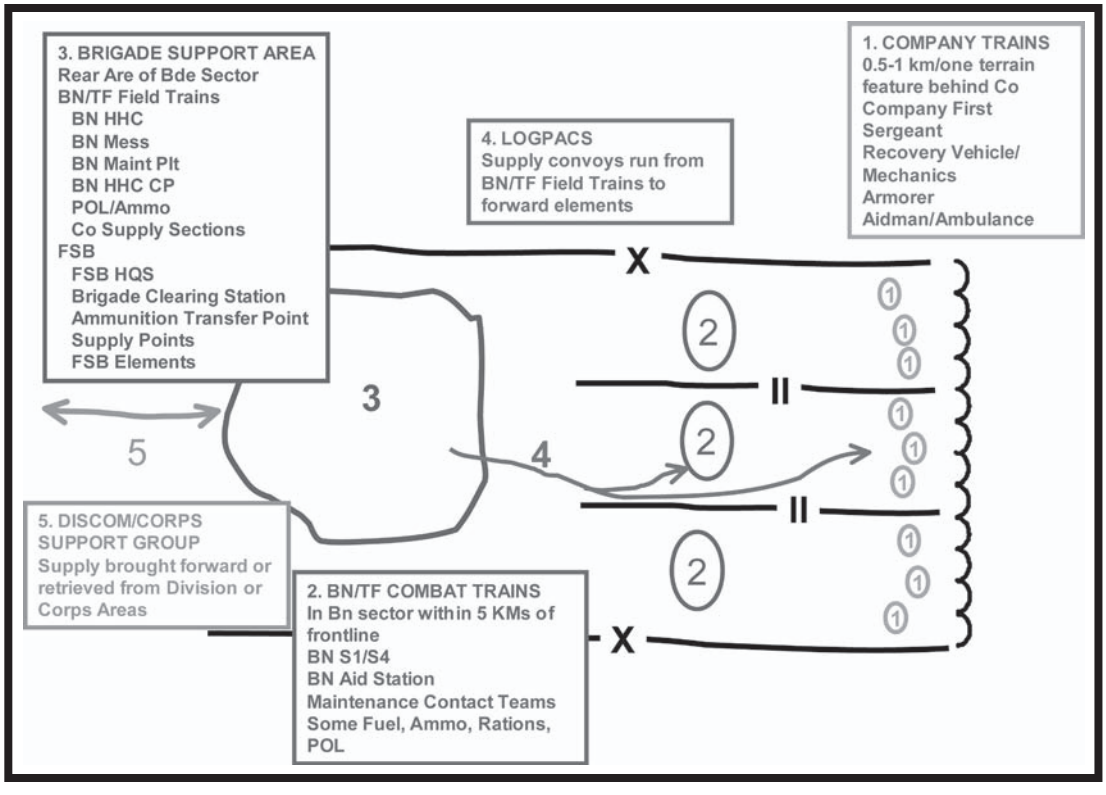

Figure 35. Brigade Tactical Logistics Organization

units. These trains typically consisted of the battalion's S1 (personnel) and S4 (logistics) officers with part of their respective sections. The battalion medical platoon established the battalion aid station at the combat trains. There would also be some ammunition, fuel, and rations loaded into trucks or into packets for resupply.

The brigade support area would be located in the brigade sector behind the battalion sectors on a defensible terrain feature with a good road network. The BSA contained the brigade's forward support battalion, battalion/task force field trains, and, in some cases, elements from higher echelon logistical units. Battalion/task force field trains, normally headed by the battalion headquarters company commander, included the elements of the Headquarters and Headquarters Company (HHC) not already deployed forward, such as the battalion mess section, maintenance platoon, and fuel and ammunition stockpiles. The line company supply sections would also be located in the field trains. FSB elements in the BSA included the brigade medical clearing station and ammunition transfer point, as well as various types of supply points and direct support maintenance activities. The BSA would be organized either as one large base camp or a series of smaller positions, each of which could mutually support each other if attacked. In each case, the overall commander of the BSA was the FSB commander.[33]

As part of the support forward philosophy, resupply from the BSA was executed through the use of Logistical Packages (LOGPACS), specially tailored supply convoys which would move forward and link up with the battalion field trains or company trains at predetermined logistical release points. LOGPACS would also bring forward mechanics, mail, and personnel replacements.

Above the BSA level was the division support area, where various DISCOM and corps support group (CSG) elements would be found. Resupply above the brigade worked both ways, with supplies being brought forward from higher or retrieved, if necessary, by brigade logistical elements.

The Brigade in Panama and in the Gulf War

The 1980s were a turbulent decade for the US Army and its brigades. By the end of the decade, however, the AOE organizational changes were implemented, the light divisions fielded, and the Cold War was virtually over—symbolized by the fall of the Berlin Wall in November 1989.[34] This portended an Army downsizing, which would have a great impact on the brigade and its role.

But first, two foreign threats needed to be dealt with. The initial one, December 1989's Operation JUST CAUSE, the invasion of Panama to remove the regime of Manuel Noriega, highlighted both the flexibility inherent in the ROAD/AOE brigade concept and the utility of the new light divisions. Brigades from the 7th Infantry Division (Light), the 82d Airborne Division, and the separate, Panama-based, 193d Infantry Brigade task organized to complete specific operational missions. The operation commenced on 20 December 1989, and employed six brigades, including three in the initial phase: the 1st Brigade, 82d Airborne Division, the division's contingency brigade, called by the designation division ready brigade-1 (DRB-1), parachuted and airlanded into Panama and conducted immediate air assault operations; the 193d Brigade moved from its garrison locations to neutralize key Panamanian Defense Force (PDF) positions on the Pacific side of the Canal Zone; and the 3d Brigade, 7th Infantry Division

(Light), forces placed in Panama prior to the operation, neutralized key PDF positions on the Atlantic side of the Canal Zone. Elements of the 7th Division's aviation brigade supported the operation and the bulk of the 7th Division, two brigades and part of the aviation brigade, arrived in follow-on echelons. The successful operation's tactical phase lasted until the end of January 1990. Brigades that participated in Operation JUST CAUSE are listed in Table 10.

The August 1990 Iraqi invasion of Kuwait set the stage for the largest overseas deployment of US Army forces since Vietnam, culminating in a brief, highly successful ground campaign in March 1991.[35] In total, the Army deployed 21 maneuver brigades, excluding divisional aviation brigades, under seven divisional headquarters. But the deployment of brigades is not

Table 10. Brigades in Panama, December 1989-January 1990

Brigade	Composition
1st Brigade, 7th Infantry Division	3 light infantry battalions 1 air defense artillery battery 1 engineer company 1 ad hoc support battalion
2d Brigade, 7th Infantry Division	3 light infantry battalions 1 field artillery battalion 1 air defense artillery battery 1 engineer company 1 ad hoc support battalion
3d Brigade, 7th Infantry Division	1 light infantry battalion 1 airborne infantry battalion 1 military police company 1 field artillery battery 1 air defense artillery battery 1 engineer company 1 ad hoc support battalion
Aviation Brigade, 7th Infantry Division	2 attack helicopter battalions 1 assault aviation battalion 1 general support aviation battalion 1 air cavalry troop
1st Brigade, 82d Airborne Division	3 airborne infantry battalions 1 field artillery battery 1 air defense artillery battery 1 tank company 1 engineer company 1 Military intelligence company 1 ad hoc support battalion
193d Infantry Brigade	1 mechanized infantry battalion 1 light infantry battalion 1 airborne infantry battalion 2 tank platoons 1 Military police battalion 1 support battalion

as clear-cut as the 21 to 7 ratio would seem to indicate. The drawdown, which had commenced with the end of the Cold War, was in full swing when forces were needed to defend Saudi Arabia and restore Kuwait. As previously mentioned, several divisions deployed without their ARNG roundout brigades. Additionally, the 1st Infantry Division's forward deployed 3d Brigade was in the middle of drawing down. Filler brigades were used to replace the missing ones. The separate 197th Infantry Brigade (Mechanized) at Fort Benning, was assigned to the 24th Infantry Division (Mechanized) and two brigades of the partially inactivated 2d Armored Division were used to fill out the 1st Infantry and 1st Cavalry Divisions. Additionally, US Army Europe (USAREUR) substituted one of the brigades of the 3d Infantry Division (Mechanized) for the 1st Brigade, 1st Armored Division. The equipmentless 3d Brigade, 1st Infantry Division (Mechanized), used its personnel at the port of Dammam, Saudi Arabia as a badly needed port support activity, supervising and conducting the unloading of ships during the deployment. The 1st Brigade, 2d Armored Division, originally deployed as a filler brigade for the 1st Cavalry Division, was detached and assigned to support the US Marine forces south of Kuwait City, providing an armored force to augment the Marines in their drive on the Kuwait airport. The assignment of brigades during the deployment and ground campaign are listed in Table 11.

Gulf War Brigade Assignments, 1990-1991

Table 11. Gulf War Brigade Assignments, 1990-1991

Division	Organic Brigades	Filler Brigades	Remarks
1st ID (Mech)	1, 2	3d Bde, 2d AD (2d AD FWD)	3d Bde (1st ID FWD) used at Dammam as port support activity
1st AD	2, 3	3d Bde, 3d ID (Mech)	
1st Cav Div	1, 2	1st Bde, 2d AD	Filler bde detached to US Marine Corps, Central Command (MARCENT); 155th Armored Bde (MS ARNG), originally slated as roundout
3d AD	1, 2, 3		
24th ID (Mech)	1, 2	197th Inf Bde (Mech)	48th Inf Bde (Mech), (GA ARNG) originally slated as roundout
82d AB Div	1, 2, 3		
101st AB Div	1, 2, 3		

The Gulf War was the first large-scale deployment utilizing the new AOE brigade and logistical organizations, as well as the new equipment and weapons ushered into the force in the 1980s. The speedy deployment of two corps worth of brigades, the execution of a rapid, decisive campaign, and the subsequent redeployment, were feats unique in US military

history. The fast ground campaign generally did not allow for extensive independent brigade maneuvers and was over quickly as the Iraqi Republican Guard and Army forces were swiftly destroyed in an uneven clash of arms, facilitated by the six-week air campaign and by air and artillery support on the ground.

In Operation DESERT STORM, brigades were components of larger forces and were seldom used for independent maneuver. The flexible organizational structure of the AOE division and the use of brigades as intermediate headquarters and task forces ratified the AOE force structure. When US forces returned to Iraq in 2003, the flexible organization would allow for the more independent use of the brigade in combat. In the next section, the operations of the 24th Infantry Division (Mechanized) will be examined to illustrate brigade operations in 1991.

24th Mechanized Division Brigades in Operation DESERT STORM

The mission of the 24th Infantry Division (Mechanized) in the ground campaign phase of Operation DESERT STORM was to attack northeast from Saudi Arabia on the right flank of the XVIII Airborne Corps and advance almost 200 miles to the Euphrates River valley, block this key escape route for the Iraqi forces trying to escape from the Kuwaiti Theater of Operations (KTO), then wheel to the right and advance 70 miles to the east toward Basra to help complete the destruction of the Iraqi Republican Guard.[36]

To control the operation, the division commander used graphic control devices. Each brigade was given a sector. Movement was keyed to perpendicular phaselines, battle positions, areas of operation (AO), and objectives. The division planned and executed the operation in five phases. The phases were as follows:[37]

Each brigade contained three battalions. The 1st and 197th had two mechanized infantry battalions and a tank battalion and the 2d Brigade the reverse, two tank battalions and a mechanized battalion. The brigades were supported by from two to five artillery battalions at any given time. An engineer battalion was also in direct support of each brigade.

Table 12. 24th Mechanized Division Five-Phased Attack, 1991

Phase 1	Three brigades abreast attack across the border for 27 miles to Phaseline Colt
Phase 2	Two brigade attack roughly 100 miles to Objectives Brown (west), Grey (east), and the third brigade to pass through the rightmost brigade (at Objective Grey) and advance an additional 60 miles to Objective Red
Phase 3	Attack into Euphrates Valley to seize battle positions facing east and west to block reinforcement to and escape from KTO
Phase 4	Attack to Jalibah and Tallil Airbases
Phase 5	Attack eastward toward Basrah

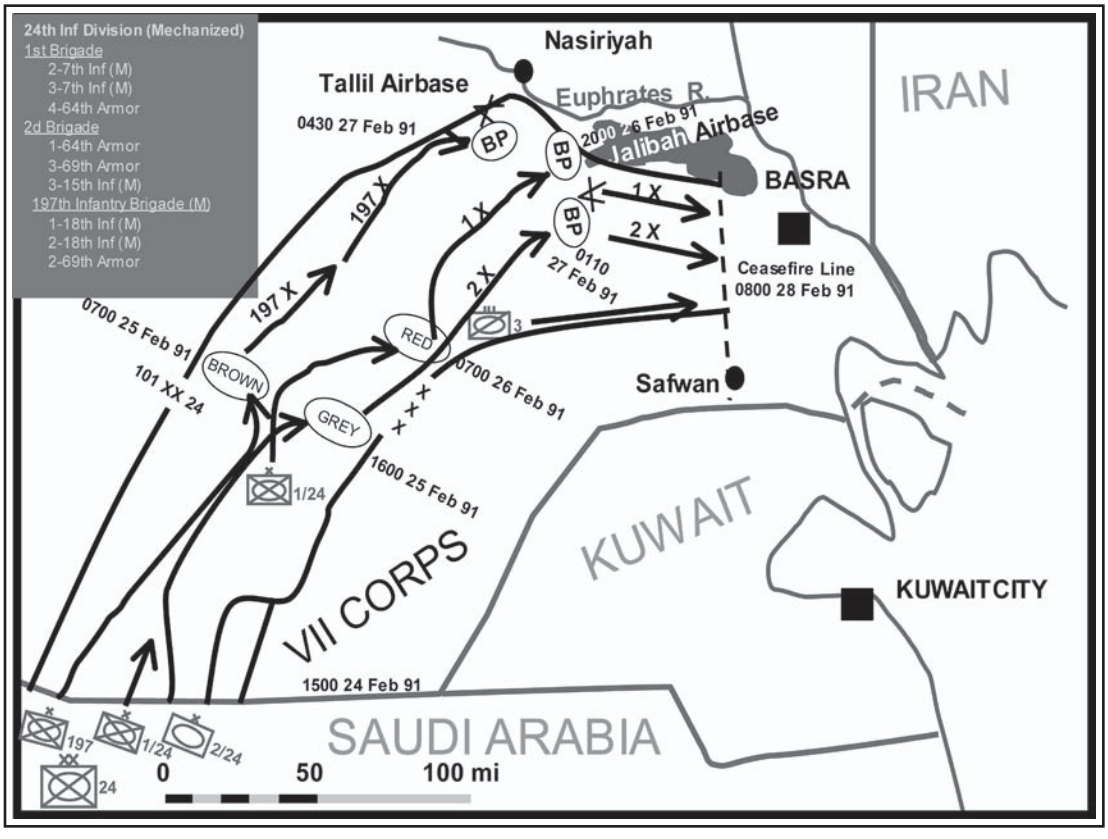

Figure 36. 24th Mechanized Division Brigade Operations in the Gulf War, 1991

Initial coordination for the attack required that the 24th not initiate offensive operations for over 24 hours after the Marines south of Kuwait and the rest of the XVIIII Corps had done so. However, the rapidity of the Iraqi collapse in other sectors pushed the attack ahead 15 hours and the three division brigades crossed the line of departure at 1500 on 24 February 1991, with the 197th on the left, the 1st in the center, and the tank-heavy 2d on the right. Upon reaching Phaseline Colt, 27 miles inside Iraq, Phase 1 ended and the 197th and 2d Brigades continued the advance, while the 1st followed the 2d Brigade. Opposition was light and spotty. The aviation brigade conducted aerial reconnaissance forward of each brigade and the brigade's armored cavalry troop preceded the 197th, with the divisional squadron scouting forward for the 2d Brigade. Throughout the afternoon and evening, the brigades advanced, even when sandstorms reduced visibility to zero. The terrain hindered the 2d Brigade's advance, when the unit had to negotiate a rugged escarpment. The 197th secured Objective Brown at 0700 25 February and linked up with elements of the 101st Airborne Division to its left. The 2d Brigade secured Objective Grey at 1600. By then, the 1st Brigade had already passed through the 2d Brigade and advanced an additional 60 miles to the north to secure Objective Red and establish east-facing blocking positions. The 1st Brigade secured Objective Red at 2230. In a little over a day and a half the three brigades had advanced 160 miles into Iraq and were preparing to close the back door on the KTO.[36]

As the 1st Brigade advanced on Objective Red, the 197th Brigade continued its advance from Objective Brown to the northeast to a battle position to launch Phase 3. Rain and rugged terrain slowed the advance, but the brigade was in its forward position at Objective Red. At 1400 on 26 February the 1st Brigade commenced Phase 3 as the division's main attack. Severe sand dunes hindered the brigade's advance, followed by defensive actions from the battalion-sized Iraqi 3d Commando Regiment, the first real opposition encountered by any of the brigades. After close in action where several small American units were briefly cut off, precision artillery strikes broke the Iraqi will to fight and they surrendered. The 197th Brigade secured its battle position overlooking the Tallil Airbase facing west at 0430 on 27 February. To the east, the 2d Brigade had already secured its eastward-facing battle position near the Jalibah Airbase at 0110. Phase 3 was over—the Euphrates Valley escape route was blocked.[37]

With the brigades in position, the division turned its attention to the key Tallil and Jalibah Airbases. At 0600 on 27 February, while the 1st Brigade fixed the enemy along east-west Highway 8 to the north and the 197th Brigade protected the western flank, the 2d Brigade, supported by an artillery barrage from five battalions, assaulted Jalibah with its two tank battalions supporting by fire, while the mechanized infantry battalion seized the airfield itself. Within 4 hours the facility was secured. The Iraqi tank battalion defending Jalibah was destroyed along with 80 antiaircraft guns. Over 200 prisoners were taken. On the afternoon of 27 February, after an air strike preparation, the 197th's TF 2-69 Armor raided Tallil to neutralize fire coming from the airbase. The raid ended the threat, but the 197th was not directed to secure the airfield, as the division was now turning east to execute the fifth and final phase of the operation. Tallil was left to the 101st Airborne Division.[38]

For Phase 5, the 24th Division reoriented to the east. Corps attached the 3d Armored Cavalry Regiment to the division, allowing the division commander, Major General Barry McCaffrey, to place the 197th Brigade in reserve. Phase 5 commenced at 1300 on 27 February. The division attacked with the 1st Brigade on the left as the main attack, 2d Brigade in the center, and the 3d ACR on the right. The 197th Brigade protected the division rear area and followed behind the 2d Brigade, ready to assume the main attack if necessary. The advance was steady, even though elements of the Republican Guard Al Faw, Adnan, Hammurabi, and Nebuchadnezzar Divisions opposed it, mostly with ineffective artillery fire. The swift drive captured a major Iraqi logistics hub, including 1,300 ammunition bunkers. The division had planned to continue the advance toward Basra on the 28th, but President George H.W. Bush issued orders for a ceasefire effective at 0800 on that day.[39]

Even though the war was technically over, elements of the 1st Brigade fought the Battle of Rumaylah on 28 March. Fleeing portions of the Hammurabi Division were discovered trying to fight their way across to the north on the causeway across marshy Lake Hawr Al Hammar, in the 1st Brigade's sector. The brigade, reinforced with an air cavalry troop and five artillery battalions, sealed off this northern escape route. As a coupe de grace, brigade received an Apache attack helicopter company which destroyed 102 enemy vehicles with Hellfire missiles from long range. To finish things, the brigade sent a reinforced armored battalion task force to attack the length of the enemy column from south to north. In the whole action the 1st Brigade destroyed over 187 Iraqi armored vehicles, 400 wheeled vehicles, 34 artillery pieces, and

seven FROG missile systems, with the loss of one soldier wounded and one M-1 tank disabled when it caught fire from being too close to an exploding Iraqi T-72 tank.[40]

The 24th Division used its three maneuver brigades to both fight and maneuver. Flexible organization and teamwork with supporting elements enhanced the division's ability to accomplish its mission quickly and effectively, even though the operation was complex, the terrain daunting, and the enemy aggressive when cornered.

NOTES

1. The brigades were the 69th Infantry Brigade (Mechanized), Kansas ARNG, which filled in for the 5th Infantry Division's brigade in Vietnam at Fort Carson from 1968-1969, and the 29th Infantry Brigade, Hawaii Army National Guard, which served at Schofield Barracks, Hawaii, as Pacific strategic reserve in 1968-1969. Both units sent soldiers as individual replacements to Vietnam.
2. John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades.* Army Lineage Series (Washington, DC: Government Printing Office, 1998), 355-65.
3. Ibid., 395.
4. Both of these units subsequently, after redeployment, were redesignated as the 3d Brigade of each division.
5. Ibid*.,* 364-66, 421-22; RC combat battalions were also used to round out AC divisions.
6. Shelby Stanton, *Anatomy of a Division: The First Cav in Vietnam* (Novato, CA: Presidio, 1987), 246-50
7. There was controversy over the naming of the attack helicopter units between being designated as attack helicopter battalions (aviation battalions) or air cavalry squadrons. The cavalry designation won out in the TRICAP division. However, with the creation of a separate aviation branch in the 1980s, the designations were switched back to aviation ones.
8 Colonel Charles E. Canedy, "From ACCB to the 6th Cavalry Brigade (Air Combat)," *United States Army Aviation Digest,* 21 (May 1975), 1-4; Lieutenant Colonel Donald R. Martin, "First Cavalry Division Reorganization," *Armor*, 83 (July-August 1974), 51-52; Ivan H. Oleson, "TriCap: A New Logistics Challenge," *Army Logistician* 3 (September-October 1971), 5-7, 33. The 3d Brigade of the division (the airmobile brigade) was originally designated 4th Brigade, as the 3d Brigade was still in Vietnam. Upon that brigade's return from Vietnam, the 4th was redesignated the 3d, although the troop units in the brigade remained the same.
9. John Wilson, *Armies, Corps, Divisions and Separate Brigades* (Washington, DC: US Army Center of Military History (CMH), 1999), 137; Wilson, *Maneuver and Firepower*, 337.
10. Wilson, *Maneuver and Firepower*, 366-67.
11. Ibid*.,* 353, 355-56, 361, 364-65.
12. John L. Romjue, *A History of Army 86. Volume I Division 86: The Development of the Heavy Division* (September 1978- October 1979), Headquarters, US Army Training and Doctrine Command (TRADOC), August 1980, 43, 66.
13. Romjue, 44.
14. John L. Romjue, *The Army of Excellence: The Development of the 1980s Army* (Fort Monroe, VA: TRADOC, 1993), 18, 20, 75, 179-86; The 2d Brigade with three combined arms battalions (CABs) was inactivated in 1988, replaced by the roundout brigade. The CABS were given infantry regimental designations, while the light attack battalions were given armor regimental designations, as there was no provision for CAB designations except within the existing branches. When Combat Arms Regimental System was first adopted in 1957, it initially merged the infantry and armor units into combined arms regiments. But it was soon dropped in favor of the traditional branch system.
15. Richard J. Dunn III, "Transformation: Let's Get It Right This Time, " *Parameters* (Spring 2001), 22-28; Romjue, *Army of Excellence*, 76; Lieutenant Colonel Stephen Bowman, "'The Old Reliables' One of a Kind," *Army* 38 (February 1988), 29-31.
16. Wilson, *Maneuver and Firepower*, 397.
17. A clarification of this point may be found on the CMH' website, written 31 January 2002, but current as of 24 April 2003, <http://www.army.mil/cmh-pg/lineage/branches/av/default.htm>.
18. Wilson, *Maneuver and Firepower*, 354.
19. Shelby Stanton, *Vietnam Order of Battle* (Washington, DC: US News Books, 1981), 109-23.
20. Ibid., 109.
21. In 1996, the 21st Cavalry Brigade (Air Combat) was created at Fort Hood, Texas, from the redesignation of the former US Army Combat Aviation Training Brigade. However this brigade is a purely training init, despite its designation.
22. Field Manual (FM) 71-100*, Division Operations*, 28 August 1996, states "the aviation brigade is a maneuver force…," g. 1-9.
23. As an exception to this, the aviation brigade of the 1st Cavalry Division is officially called "Cavalry Brigade, 1st Cavalry Division."
24. Wilson, *Maneuver and Firepower*, 359.

25. Ibid., 356.
26. Romjue, *Army of Excellence*, 78.
27. Wilson, *Maneuver and Firepower*, 400.
28. Sometimes the command battalion, 6-101st Aviation, is placed under the 159th Bde.
29. This section is largely, but not exclusively, based on the author's experiences. Headquarters, Department of the Army. FM 71-123, *Tactics and Techniques for Combined Arms Heavy Forces: Armored Brigade, Battalion Task Force, and Company Team* (Washington, DC: US Army, 1992), and US Army Logistics Management College. *Support Operations Course (Phase I)*. Lesson Book (Fort Lee, VA: US Army Logistics Management College, 1992).
30. *3d Brigade, 101st Airborne Division (Airmobile),Combat Operations After Action Report—Summary APACHE SNOW*, dated 25 June 1969, 1-2.
31. Romjue, *Division 86: The Development of the Heavy Division,* 87. In 1981, the FASCO had his own office in the headquarters, 2d Brigade, 8th Infantry Division (Mechanized), Smith Barracks, Baumholder, Germany.
32. Romjue, *Army of Excellence*, 49, 55, 91.Colonel John R. Landry and Lieutenant Colonel Bloomer D. Sullivan. "CSS: Resourcing and Sustaining the AirLand Battle: Forward Support Battalion," *Military Review* 67 (January 1987), 27-29.
33. Romjue, *Army of Excellence*, 10; Landry and Sullivan, 27; Major John E. Edwards, *Combat Service Support Guide.* Second Edition (Harrisburg, VA: Stackpole Books, 1993), 51.
34. Operation URGENT FURY, the invasion of the island of Grenada, October 1983, saw the use of three brigade headquarters and attached units from the 82d Airborne Division, still organized under the old ROAD tables of organization.
35. The deployment of US forces was actually two roughly 90-day deployments: XVIII Airborne Corps in August-November 1990, and VII Corps in November 1990- February 1991. See John J. McGrath. *Gulf War Build Up*, unpublished PowerPoint document, 2001, CMH, Washington, DC.
36. *The Victory Book: A Desert Storm Chronicle* (Fort Stewart, GA*:* Public Affairs Office, 24th Infantry Division (Mechanized), 1992), 70-71; Major Joseph C. Barto III, *Task Force 2-4 Cav-"First In, Last Out": The History of the 2d Squadron, 4th Cavalry Regiment, During Operation Desert Storm* (Fort Leavenworth, KS: Combat Studies Institute, 1993), 47.
37. *The Victory Book*, 76; Barto, 47-51.
38. *The Victory Book*, 82-91; Barto, 57-60, 62-71.
39. *The Victory Book*, 94-95; Barto, 72-76.
40. *The Victory Book*, 98, 100-1; Barto, 76-77, 79-81.
41. *The Victory Book*, 104-5; Barto, 80.
42. *The Victory Book*, 108-16; Barto, 96-99.